

sical writers, a rational account of the history of the Kollam Anda, and a critical examination of the chronological data of the Rajatarangini.

The second part, which in all probability will be issued before the middle of next year, will first show how the Kaliyuga which really began in 1177 B. C. came subsequently to be supposed to have commenced in 3102 B.C., and will discuss the date of the Vishnu Purana, the astronomical explanation of the Yugas and the nature of the epochs and cycles prevalent in India. The next chapter, perhaps the most important in the whole book, will attempt to place the date of the Rigveda beyond all reasonable doubt by a discussion of certain passages in that Veda, hitherto misunderstood, which yield us, not vague generalisations or bare possibilities, but specific unimpeachable testimony. The concluding chapter will examine further fresh materials, fix the date of the Aryan immigration into India and close with a short *resumé* of the leading facts in the History of Aryan India from the earliest times to the sixth century after Christ, such of the few footprints as can still be traced in the shifting sands of Time.

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CONTENTS.

CHAPTER I.

THE BEGINNING OF THE KALIYUGA.

THE need for a critical method of enquiry, 1-2. Was the Mahabharata War an historical event, 3-8. The Puranas, 9-10. The different dates hitherto assigned for the War, 10-14. Argument based on the Vedanga Jyotisha, 14-26. Twenty-seven or Twenty-eight Nakshatras, 21-22. Bharani 10° same as the beginning of the Krittika, 23-26. The Yavana invasion referred to by Patanjali and Garga occurred before 165 B. C. and is not to be identified with the invasion of Menander, 27-34. The statements of classical historians regarding the Chronology of Ancient India examined, 34-43. The Saptarshi Cycles, 39-43. The origin and nature of the Kollam Andu, 45-50.

CHAPTER II.

THE DATE OF THE MAHABHARATA WAR.

Summary of Chapter I, 51. The War took place about 16 years before the commencement of the Kaliyuga, 52-56. The chronology of the Rajatarangini discussed, 56-61. Aryabhata and the Saptarshi Cycles, 61-62. Argument based on the lists of kings contained in the Puranas, 62-68. The periods given in the Puranas for the pre-Chandragupta kings discussed, 68-68. The sloka of Garga regarding the epoch of Yudhishtira critically interpreted, 68-76. The epoch of Buddha's Nirvana, 70-77. The Brihaspati Cycle of 60 years, its nature and origin, 77-79. The winter solstice immediately following the War was the seventeenth before the commencement of the Kaliyuga, 80-84. Summary of the preceding arguments, 85-86. Consequently the War took place at the end of 1194 B. C., 87. The Date of the Epic Mahabharata, 88-89. The statements of the epic discussed, and the result arrived at that the war might have taken place between the 14th and the 31st of October, 89-104.

CHAPTER III.

THE FOUR YUGAS

The Puranic Divisions of Time, 105-107. The Dates of the Manusmriti and the Mahabharata, 108-109. The Durations of the Yugas according to the Smriti and the Epic, 109-112. The year of the Devas,—Where is Mount Meru, 113-117. The Durations of the Yugas at the time of the compilation of the Atharva Veda, 117-122. History of the Kollam Andu, 122-125. The date of the Aryan immigration into South India, 124. The end of the Kaliyuga and the state of society in 177 B. C., 125-127. The creation of the Sandhya Periods, 128-133. When Hinduism was at its lowest ebb in India, 134-135. Hindu Revival and the Renaissance Period in India, 135-136. When the Yugas first came to have their present extraordinary durations, 137. The origin of the term Yuga and its occurrence in the Rig Veda, 137-138. The Date of the compilation of the three older Vedic Samhitas, 139. The Dates of Atharva and Vajasaneya Samhitas and Taittiriya and Aitareya Brahmanas, 140-143. The names of the four Yugas mentioned for the first time in Sanskrit

Literature, 143-150. Rational explanation of the names of the Yugas, 151-155. Gambling in Ancient India, 153. *How the Yugas first came to have different periods*, 154-155. Mr. Rangacharya's views examined, 156-157.

The Chronology of Ancient India.

CHAPTER I.

THE BEGINNING OF THE KALIYUGA.



THE heroes of the Mahabharata War and the chief incidents connected therewith are matters almost of daily conversation even in the remotest corners of India. In most of the Indian villages the wars are fought over again and again in the rude, but powerful, nightlong dramatic performances. The most illiterate villager of the poorest hamlet knows, or thinks he knows, something of the great Pandava heroes. The annual Dharmaraja festivals serve to freshen his untrained memory and to stir up his dormant feelings. The cultured Brahman, on the other hand, who piously recites, day after day, portions of the Bhagavad Gita, that marvellous episode in the great Indian epic, is daily reminded of that great conflict which ushered in the modern or the Kali Age. Yet, educated India cares seldom to enquire into the question of the date of the War with even a little of that historical spirit which above everything else distinguishes the European from the Hindu.

Not that materials are wanting to guide us in our attempts to arrive at the truth. Nor is it even that Hindus of requisite ability and knowledge are loath to tackle such problems, a solution of which would be most heartily welcomed by every lover of India. Rather it is that false pride which refuses to question long-cherished opinions and which feels greater pleasure in treating events as of the remotest antiquity. Sometimes it is that new-fangled mysticism which aims at giving impossible explanations of every pre-existing opinion or prejudice. When the atmosphere is so ill-suited, the light of history cannot illuminate the dark labyrinthian passages of the *Ancient Chronology of India*. What India is now in need of is that faculty of scientific intuition which should divest itself of any tendency that might stand in the way of historical veracity. It is the humble purpose of the writer to dispassionately discuss such materials as may be forthcoming, in order to draw therefrom certain conclusions respecting the date of the War and the chronology of Ancient India.

The date of the war is, as is well known, mixed up with the system of Yugas about which many learned scholars have hitherto written. The present Yuga began soon after the great war was fought in the holy plains of Kurukshetra; and

if it be possible to arrive even approximately at the date of the War, the riddle of the Yugas, which has hitherto baffled the ingenuity of learned scholars, will have been in a manner solved.

Was the War an historical event or is it a mere allegory? Almost all scholars * are agreed that a great War took place between the Kurus and the Panchalās very long before Gautama Buddha was born. They have no doubt that the epic narrates truly, though rather extravagantly, a war that waged with disastrous results in the northern parts of India. "There can be little doubt," says Professor Macdonell, "that the original kernel of the epic has, as an historical background, an ancient conflict between the two neighbouring tribes of the Kurus and the Panchalās who finally coalesced into a single people."† Lassen ‡ thought that the epic narrated an actual conflict between the Kurus and the Panchalās, the latter under the leadership of the Pandavas, ending in their mutual annihilation. Weber§ says that "one thing is clearly discernible in

* R. C. Dutt's *Civilisation in Ancient India*, Vol. I page 10. Weber's *Indian Literature*, page 187.

† *Sanskrit Literature*, 285.

‡ Weber's *Indian Literature*, 135.

§ Weber's *Indian Literature*, page 187.

the Mahabharata, that it has as its basis a War waged on the soil of Hindustan between Aryan tribes and therefore belonging probably to a time when their settlement in India and the subjugation and Brahmanisation of the native inhabitants, had already been accomplished." It may be idle at this late hour to establish by arguments what has been already conceded by scholars that the main plot of our epic is based on history. It is an easy pastime to deny the truth of the events of the past: but strangely enough it is often difficult to prove their actual occurrence. Did not the late Archbishop Whately, the famous logician, prove conclusively that the great Napoleon had never existed? Yet, that hero of many fights it was that more than anybody else shaped the fortunes, and altered the map, of many a country in the dawn of the century that has now expired. The lesson that the learned divine so humorously teaches must not, by us, be lost sight of in dealing with the new order of sceptical critics whose erratic genius takes the greatest pleasure in denying the fundamental basis of the Sanskrit epic, in whose truth nearly a seventh of the human race sincerely believes.

Nor are the chief characters and the principal incidents of the War merely poetic fictions. It is ridiculous to suppose that an epic with such strong

characterisation could be a fabrication of an ingenious mind, at any rate, in India. It needs not much knowledge of Sanskrit literature to discover that the heroes and the heroines of standard Indian works are almost all of the same type. The tameness of similarity is a standing reproach against Sanskrit dramatic literature. But as for the Mahabharata, what wealth of characterisation, what artistic delicacy of touch, what depth of human interest, all depicted in the most natural manner and without the slightest appearance of effort! "In the Mahabharata human interest everywhere preponderates, and a number of well-defined personages are introduced, to whom the possibility of historical existence cannot be denied."* The high-souled Karna, for instance, loyal and generous, but vain and boastful; Yudhishtira, the good and the wise, but fond of dice whose dangers he had the intelligence to understand, but whose temptations he had not the strength of will to resist; the lion-hearted Bhima, righteous but vindictive; the chivalrous Arjuna and the cultured Sahadeva; the politic Sri Krishna and the downright Balarama; the Royal sage Bhishma and the Brahman warrior Drona; the impetuous Asvathaman; the envious Duryodhana and the unprincipled Sakuni; the

* Weber's Indian Literature, page 192.

imperious Droupadi and the faithful Gandhari;—every one of these so unlike every other. There is no attempt in all Sanskrit literature at such matchless character painting. But the epic is based on a substratum of historical facts and therefore successfully accomplishes what no other work in all India has ever attempted. Visakhadatta's *Mudrarakshasa* is indeed a feeble exception, but here again the plot is borrowed from real history.

Furthermore, let a traveller pass through any tract in India from the Himalayas to the Cape, from Kathiawar to Burma; he is confronted everywhere with striking evidence that the Pandava princes are still held in the deepest veneration by the Brahman and the Jain, by the cultured races of the plains and the primitive tribes of the hills. The influence of a got-up poem may affect the literate classes, but not the simple rustics inhabiting hilly isolated regions. Unless the main events of the war had actually taken place, the influence of an imaginary epic, however grand and however thrilling, cannot take the leading place in the hearts of the untutored millions of India.

It is well known that the five Pandava heroes married a single maiden, the Panchala Droupadi. "The description of the transaction represents it as one which was opposed to public opinion and which

was justified more by very remote tradition than by existing practice.* The epic represents Drupada, the father of the lady, as having been shocked at the proposal of all the princes marrying his daughter. Undoubtedly, as Professor Max Müller† remarked, the epic tradition must have been very strong to compel the author to record a proceeding so violently opposed to Brahmanical law. If the characters and the incidents of the epic were purely mythical, how comes it that the compilers thereof thought it proper to give special prominence to such an un-Aryan practice?

In the oldest of the Vedas the names of the two royal brothers Devapi and Santanu are mentioned, the latter of whom was the great grandfather of the Pandavas and the Kauravas. In the Aitareya Brahmana and in the Satapatha Brahmana, Janamejaya Parikshita, the great grandson of Pandava Arjuna, is mentioned, and from the latter work we may also gather that Janamejaya and his three brothers, Bhimasena, Ugrasena and Srutasena, had died shortly before its compilation. Professor Weber‡ says that in the Kathaka Samhita, a Sakha of the Black Yajurveda, mention is made of Dhritarashtra Vaichitravirya and the contests of the Pan-

* J. D. Mayne's Hindu Law and Usage p. 65.

† Ancient Sanskrit Literature, p. 46.

‡ Indische Studien, III. p. 469—472.

chalas and the Kounteyas. The Taittiriya Aranyaka mentions Vyasa Parasarya and his pupil Vaisampayana, the former of whom was the actual father of Pandu and Dhritarashtra; and the family of the Parasaras is mentioned with especial frequency in the Vamsas of the White Yajus. Parasara and probably also his son Krishna (Vyasa) are the authors of a few hymns of the Rigveda. The Asvalayana and the Sankhayana Sutras and Panini mention the words 'Bharata' and 'Mahabharata'. Panini, 'who cannot be assigned to a date later than the fourth century B. C.,' and whom Goldstucker places in the ninth or tenth century B. C., speaks of Kunti, Yudhishtira, Vasudeva, Arjuna, and Drona, all of them leading characters in our epic. Dion Chrysostom of the first century A. D. actually speaks of the existence of an Indian Homer; and Patanjali, who lived in the second century B. C., quotes a few verses which are still to be found in the Mahabharata. As all these ancient works and authors bear testimony to the reality of the principal personages that figured in the War, we may consequently conclude that it was an undoubted historical event.

Not only the Mahabharata, but most of the Puranas also, refer to this great War between the Kauravas and the Pandavas. These Puranas are collections of bardic traditions preserved in a

systematic manner. Though mainly prophetic in tone, (for it has to be remembered that their reputed author Vyasa Parasarya lived at the time of the war, but the events related therein reach down to a comparatively modern period), they are the repositories of traditional learning and old time legends. Much of what is contained therein has not any historical value; but enough is still to be found in the more authentic ones to attract the attention of the student of history. In the words of the late Mr. H. H. Wilson, 'a very large portion of the contents of many, some portion of the contents of all, is genuine and old; and it is therefore as idle as it is irrational to dispute the antiquity or authenticity of the greater portion of the contents of these Puranas.' They 'contain political and chronological particulars to which on the score of probability there is nothing to object. In fact their general accuracy has been incontrovertibly established.* The Chandogya Upanishad refers to Itihasa Puranas as a branch of literature; and the Satapatha Brahmana mentions Itihasa and Puranas. May we not infer therefrom that some kind of annals of kings and dynasties existed even in that ancient period? 'Proba-

* Wilson's Vishnu Purana, Introduction.

Magha Nakshatra at the birth of Parikshit, had moved on to Purvashada Nakshatra at the accession of Nanda to the throne. As there are ten lunar asterisms between Magha and Purvashada, the period denoted by the movement is one thousand years; and the Nandas reigned for a hundred years. Therefore the war is placed 1100 years before Chandragupta, or at about 1415 B. C. Moreover, the vernal equinox was in the beginning of the Krittikas (Pleides) during the time of the war. As it had receded by reason of the precession of the equinoxes to the Aswini Nakshatra in the year 499 A. D., the war is said to have taken place about 1426 B. C. It is also considered that the names Rohineya, Maghabhu, Ashadhabhava, and Purvaphalgunibhava accorded respectively to Mercury, Venus, Mars and Jupiter point to B. C. 1424, when the moon and the planets were in conjunction in the constellations denoted by the names. There is not much force in this last argument, because the positions given in the Vayu and Linga Puranas for some of the planets are totally different. Professor Max Muller is of opinion that "these names of the planets have never been met with either in the Vedas or in any of the early productions."* Besides, there is

* Rig Veda Vol IV. Preface, p. xxxiii.

nothing that connects these positions with the date of the war.

Such are the arguments which are advanced to fix the date of the war in the middle of the fifteenth century B. C.* But Mr. R. C. Dutt and Mr. Fergusson place the war in the middle and in the beginning of the thirteenth century B.C.† respectively. The late Mr. H. H. Wilson thus sums up the opinion of his time on the subject: "According to Col. Wilford's computations (*Asiatic Researches* Vol. IX, chronological table, p. 116) the conclusion of the great war took place B.C. 1370. Buchanan conjectures it to have occurred in the thirteenth century B.C. Vyasa was the putative father of Pandu and Dhritarashtra and consequently was contemporary with the heroes of the great war. Mr. Colebrooke infers from astronomical data that the arrangement of the Vedas, attributed to Vyasa, took place in the fourteenth century B. C. Mr. Bentley brings the date of Yudhishtira, the chief of the Pandavas, to 575 B. C.; but the weight of authority is in favour of the thirteenth or fourteenth century B. C. for the war of the Mahabharata and the reputed commencement of

* Mr. M. Rangacharya's *Yugas*, pp. 31-35.

† Dutt's *Ancient India*, p. 10. Fergusson's *History of Indian and Eastern Architecture*, p. 36.

the Kali age."* Professor Macdonell traces "the historical germ of the great epic to a very early period which cannot well be later than the tenth century B. C."† While these conflicting opinions are of great value as being indicative of the period when the war might have taken place, they unfortunately lack that precision and certainty which are so much to be desired. It will appear from the sequel that the reasons on which these opinions are based are far from conclusive and that the weight of probability rather indicates a somewhat different date.

To begin with, we have the evidence of the *Vedanga Jyotisha*, the earliest of the treatises on astronomy to be found in India. A *Jyotisha Vedanga* is referred to by Apastamba whom Dr. Buhler‡ places on linguistic grounds in the third century B. C. and on other grounds about two centuries still earlier. The *Mundakopanishad*,§ one of the few ancient Upanishads turned to account in so early a work as the *Vedanta Sūtras* of Badarayana, mentions the six Vedangas by name, of which the *Jyotisha* is one. We have no means of

* 'Vishnu Purana' Vol. IV. p. 232.

† Sanskrit Literature, p. 285.

‡ Sacred Books of the East, Vol II. Introduction,

§ Mundaka Upanishad I. i. 5

ascertaining whether the Jyotisha known to us as Vedanga is, or is not, the one referred to in those ancient works; but the archaic language in which our Vedanga is written and the unintelligible nature of some of the verses prove beyond doubt that it is a very ancient treatise, though perhaps not as old as the astronomical positions it indicates. The ancient Aryans in India had a knowledge of elementary astronomical phenomena as is evident from the numerous references to them in the Rik and the other Vedas. To better enable them to fix the seasons for their innumerable sacrifices, they devised a few elementary treatises on astronomy, one of which is still preserved to us in the Vedanga Jyotisha. Says Dr. M. Haug in his introduction to his *Aitareya Brahmana*,* "A regulation of the calendar by such observations was an absolute necessity for the Brahmans; for the proper time of commencing and ending their sacrifices, principally the so-called *sattras* or sacrificial sessions could not be known without an accurate knowledge of the time of the sun's northern and southern progress. The knowledge of the calendar forms such an essential part of the ritual that many important conditions of the latter cannot be carried out without the former." Professor Max Muller admits that there

* Vol I. p. 46.

“When the sun, O Sage, is in the first quarter of Krittika and the moon is in the fourth quarter of Visakha, or when the sun is in the third quarter of Visakha and the moon is in the head of Krittika, that is the time of the equinox and it is holy.” Mr. Wilson seems to have misunderstood the meaning of भाग and अंश in the above verses, for he takes them to mean ‘degree’. It will readily appear that ‘quarter’ is the more appropriate meaning, for it is only then that the sun and the moon are in “opposition” to each other.

The positions given by the Vedanga Jyotisha are also referred to by Garga* and Varahamihira†; but they differ from those obtaining at present and even from the positions mentioned by Varahamihira as having been observed about the year 3600 ‡ of the modern astronomical Kali era, or in 499 A.D. This great astronomer, who was born in 505 A. D., says in his Brihat Sambhita:—“In the old treatises it is said that the summer and winter solstices took place with the sun in the middle of Aslesha and in the beginning of Dhanishta respectively; but at present they occur in the beginning of Cancer (beginning of the last quarter of Punarvasu) and

* See Mr. Tilak's Orion, p. 36.

† Brihat Sambhita, III, 1 & 2.

‡ Warren's Kala Sankalita, p. 389.

of Capricorn (beginning of the second quarter of Uttarashada) respectively." Therefore the winter solstice, which happened with the sun in the beginning of Dhanishta at the time denoted by the Vedanga, had receded in 499 A.D. to the end of the first quarter of Uttarashada, that is, by an arc of $23^{\circ} 20'$. As the rate of precession of the equinoxes is, according to the illustrious French savant M. Le Verrier, about $50\cdot24''$ *per annum*, the point of time denoted by our astronomical treatise is about 1672 years before 499 A.D., or about 1173 B.C. Archdeacon Pratt and Bentley, both of whom* had gone over the calculation, were of opinion that the observations indicated 1181 B. C.

The next question is to ascertain what it was that took place about 1173 B.C. of such consequence as to induce the ancient astronomers to record the astronomical positions for the event. Mr. R. C. Dutt states that 'tradition has it that when the Vedas were compiled the position of the solstitial points was observed and recorded to mark the date.' Professor Weber considers that both the Yajur Veda Samhitas may be shown from internal evidence to have assumed their present shape about the time of the war of the Mahabharata, and the Puranas relate that Vyasa, the compiler of the Vedas, lived about the time of the war. It is therefore proba-

*Max Muller's Rig Veda, Vol IV, Preface, p XXVII.

ble that the astronomical positions refer to the period of the war which preceded the beginning of the Kaliyuga by a few years. The Jyotisha itself states that the first year of the 'Yuga' commenced at the winter solstice with the sun and the moon at the beginning of Dhanishta. In those early times there were two kinds of 'Yugas,' the five year cycle and the Kaliyuga.* It is hard to believe that the positions referred to in the Vedanga denote only the beginning of such a short-lived Yuga as the five year cycle. It is reasonable to suppose that they also mark the time of the commencement of the Kali with which probably began the first of a new series of five year cycles.

But it may be asked what authority there is, besides the Vedanga, to suppose that the Kali era began when the vernal equinox occurred with the sun in Bharani 10°. On the contrary, there might seem to exist sufficient evidence to suppose that at the time of the great war, which occurred a few years before the Kaliyuga began, the vernal equinox took place with the sun in the Krittikas. For example, there are many passages in the Taittiriya Samhita, the Taittiriya Brahmana and other Vedic

* Vedanga Jyotisha (Yajur Recension), verses 5-7. Aitareya Brahmana VII-15.

works where the Krittikas occupy the first place* in the list of the Nakshatras. The Krittikas are the mouth of Nakshatras, says the Taittiriya Brahmana (1. 1. 2. 1). In the Atharva Veda (1. 19. 7) and in the Yagnyavalkyasmṛiti, they occupy their early position, while the Vishnu Purana, as we have seen, actually places the vernal equinox in the beginning of the Krittikas. The Mahabharata says that the winter solstice took place sometime after the conclusion of the war on the fifth day after the new moon in the month of Magha,† and Hindu astronomers hold from such references that the vernal equinox was then in the Krittikas.‡ If therefore at the time of the war the equinox was in the Krittikas, it might appear that at the beginning of the Kali era, which very shortly followed the war, the vernal equinox could not have receded to Bharani 10° , that is, a precession of $3^{\circ}.20'$ which would take about 240 years to be accomplished. But this difficulty is easily explained.

It must be remembered that though the astronomical treatise gives only twenty-seven Nakshatras, the admittedly older works, the Atharva Samhita§

* See Max Müller's *Rig Veda* Vol. IV, Preface, p. xxxiv. Mr. Tilak's Orion, p. 39. *et seq.*

† Anusasana Parva, ch. 167. 26 and 27.

‡ Mr. Tilak's Orion, p. 37. footnote.

§ XIX. 7. 1. 81.

and the Taittiriya Brahmana* enumerate twenty-eight Nakshatras. What is more important is the fact that the list of the Atharva Veda connects the twenty-eight Nakshatras with as many days and that the lists of the Taittiriya Brahmana show the connection of these twenty-eight asterisms with a lunar synodical month. We may therefore infer that at the time of the compilation of these two Vedic works, the number of lunar asterisms was twenty-eight. But curiously enough we meet with only twenty-seven Nakshatras in the Taittiriya Samhita, where Abhijit is left out. So also the mention of 'trinava', twenty-seven, in the Taittiriya Samhita (VII. 1. 3. 2) refers probably to the twenty-seven Nakshatras. While on the one hand the Taittiriya Samhita is the oldest of these three nearly contemporaneous compilations, the list of the Taittiriya Brahmana is, on the other hand, mentioned in connection with an old kind of sacrifice called Nakshatreshiti, a ceremony based on the supposition that there were twenty-eight Nakshatras. If we may judge by the generally received opinion that whatever is used for sacrificial purposes has the flavour of antiquity in it, possibly the original number was twenty-eight; and the mention of only twenty-seven Nakshatras in the Taittiriya Samhita†

* III. 1. 2. 5., III. 1. 5. 6.

† IV. 4. 10.

may be due to the fact that it was compiled under the immediate direction of the learned son (Vyasa) of a great astronomer (Parasara), the reputed author of an ancient astronomical treatise, who might have been the first to omit Abhijit from the list of the Nakshatras in order to suit his astronomical calculations. Professor Whitney and M. Biot hold that the original number was twenty-eight, while Professor Max Muller thinks that the number of Nakshatras was originally twenty-seven.* For our present purpose, it is enough to note that at the beginning of the Kaliyuga, when the compilation of the Taittiriya Samhita, at least in its original form, was completed and that of the Brahmana was almost begun, people were acquainted with both the lists. But from that time forward astronomers continued consistently to use twenty-seven Nakshatras only. From the earliest astronomical treatise known to us, namely, the Jyotisha Vedanga, to the latest work on Hindu astronomy, we find that all the Hindu astronomers, Garga, Aryabhata, Varahamihira, Brahmagupta, Bhaskaracharya and many others regulate their calculations by the twenty-seven Nakshatra system. It is this number that is referred to in the Mahabharata,

* Rig Veda Vol. IV, Preface, p. xlv.

Manu Smṛiti and the Vishnu Purāṇa. We may therefore be sure that the number of twenty-eight Nakshatras which prevailed about the time of the compilation of the Atharva Veda Saṃhita and of the Taittirīya Brāhmaṇa was not adopted by later astronomers who preferred to use the more astronomically suitable number of twenty-seven Nakshatras.

The astronomers effected another improvement on the old method. The Nakshatras were made to begin with Dhanishta instead of with the Kṛttikas as of old. Somakara quotes an old saying of Garga in his commentary on the Vedāṅga Jyotiṣa (verse 5), तेषां च सर्वेषां नृक्षत्राणां कर्मसु कृत्तिकाः प्रथमाचक्षते श्रविष्ठा तु संख्यायाः, which means that "of these Nakshatras, the Kṛttikas are the first for sacrificial purposes and the Śravishta (Dhanishta) are the first for purposes of calculation." It is clear therefore that, in those early times referred to by Garga, the twenty-seven Nakshatras were counted from Dhanishta in works on astronomy. If the winter solstice was in the beginning of Dhanishta according to the Vedāṅga Jyotiṣa, the vernal equinox would be placed by astronomers in the end of the third quarter of Bharani. On the other hand, according to the twenty-eight Nakshatra system, if the winter solstice be at the same

to denote the position, could have been supposed to mark the vernal equinox. To answer this question this part of the heavens must be clearly laid before the mind's eye. Mrigasiras or the head stars of Orion are the earliest recorded beginners of the year, for with the sun near them the vernal equinox began the year in the very earliest period of Aryan history.* According to the Surya Sidhanta† the distance between the asterisms Mrigasiras and Rohini (Aldebaran) is stated to be $13^{\circ} 30'$. The distances between Rohini and the Krittikas and between the latter and Bharani are stated to be 12° and $17^{\circ} 30'$ respectively. As in those early times the heavens were divided into Nakshatras and Nakshatrapadas, and not into degrees and minutes, it must have been then crudely supposed that the distances between Mrigasiras and Rohini and between Rohini and the Krittikas represented nearly the arc covered by a divisional Nakshatra (i. e. $13^{\circ} 20'$), that the distance between the Krittikas and Bharani denoted a divisional Nakshatra and that the distance between the Krittikas and Bharani denoted a divisional Nakshatra and a quarter. The divisional Mrigasiras would therefore begin with the asterism Rohini (Aldebaran) and the divi-

* Mr. Tilak's Orion, Chapters IV, V, VI and VII.

† Chapter VIII.

sional Rohini with the asterism Krittikas (Pleiades). The end of the divisional Krittikas would consequently coincide with the asterism Pleiades and its beginning would be placed about a *pada* after the asterism Bharani. Thus the position given by the Vedanga Jyotisha for the vernal equinox, namely, the end of the third *pada* of Bharani, was sufficiently identified as being distant from the stars Krittikas by one divisional Nakshatra and from the Stars Bharani by one Nakshatrapada.

We may therefore conclude that, at the beginning of the Kaliyuga, the vernal equinox took place with the sun at the end of the third *pada* of Bharani. As it is recorded that, in 499 A. D. the vernal equinox occurred with the sun in the first point of Aswina,^a there was a precession of $23^{\circ}.20'$ from the beginning of the Kali to 499 A.D.; that is, in other words, the Kali era began about 1173 B. C. It consequently follows that it is unreasonable to suppose, as some scholars have done, that the war happened about 1426 B. C. on the ground that the vernal equinox then took place with the sun in the Krittikas.

Secondly : The great Indian astronomer, Gargacharya, says in his Siddhanta when speaking of Salisuka, the fourth in succession from Asoka: "Then the viciously valiant Greeks, after reducing Saketa, Panchala country to Mathura, will

reach Kusumadhwaja (Patna) : Pushpapura being taken, all provinces will undoubtedly be in disorder. The unconquerable Yavanas will not remain in the middle country. There will be cruel and dreadful war among themselves. Then after the destruction of the Greeks at the end of the Yuga, seven powerful kings will reign in Oudh." Mr. R. C. Dutt, from whose excellent work on Civilization in Ancient India the above translation is taken, remarks "we are then told that after the Greeks the rapacious Sakas were the most powerful and we have little difficulty in recognising in them the Yueti conquerors." The annals of Garga here come to an end. The very same foreign invasion is mentioned by Patanjali in his famous Mahabhashya on Panini. In commenting on the rule of Panini that the imperfect tense has to be used when the speaker refers to a past action, or (as Vararuchi adds in his Vartika) when the event related is out of sight but actually taking place at the same time, Patanjali illustrates the rule with the examples, "Arunadyavanah saketam," "Arunadyavano madhyamikan," "the Yavana besieged Saketa," "the Yavana besieged the Madhyamikas." The commentators on the Mahabhashya explain that Patanjali lived at the time, although not on the spot, when the Yavana besieged Oudh and the Madhyamikas. He refers also to "Mouryas," "Hall of

Chandragupta," and "Hall of Pushyamitra." From these references Dr. Goldstucker* infers that Patanjali lived about 144 B. C. But he was led to give that date because he thought that the Yavana invasion of Saketa and of the Madhyamikas referred to the Bactrian king Menander's invasion of Hindustan and encounter with the Buddhist Madhyamikas, the followers of Nagarjuna. Dr. Bhandarkar† infers that Patanjali wrote this particular portion about 144-142 B. C. on the ground that Menander is therein referred to and also for the reason that Patanjali speaks at the same place of sacrifices as still being performed for Pushyamitra.

It will be readily conceded that the word "Madhyamikas" denotes, as its etymology shows, the residents of the middle country, the same people that are referred to by Garga as the residents of the Madhyadesa or middle country. Patanjali himself explains the term to mean 'people or towns belonging to Madhyadesa'‡ and the Manusmriti § defines Madhyadesa to be the tract of country lying between the Himalayas in the north and the Vindhyas in the south and between Alla-

* Panini, p. 234.

† *Indian Antiquary*, I 299; II. 59.

‡ Mahabhashya V. 32.

§ Manusmriti II. 21.

habad in the east and Vinasana in the west. Consequently king Milinda's encounter with Nagarjuna and the Madhyamika sect recorded in Buddhist legends need not be identified with the Yavana invasion referred to by Patanjali and Garga. Moreover Dr. Rajendralala Mitra* has shown that Menander never came as far as Oudh but only proceeded up to the Jumna, and in order that he might reach Oudh, he should have gone three hundred miles more to the eastward. That Garga does not refer to the invasion of Menander, which took place about 144 B. C., but to an earlier invasion of the Bactrian Greeks is proved by his referring it to the time of Salisuka who, according to the Vayu Purana, reigned for seven years after having ascended the throne 111 years from the date of Chandragupta or in the year 204 B. C.

In Madame Duff's recently published Chronology † of India, we find the following recorded:—

- (1) 206 B. C. Antiokhos III of Syria, after making war on Euthydemus of Bactria, came to India and made a treaty with Sophagasenas (Subhasena).
- (2) 195 B. C. Demetrias of Bactria invades and reduces the Punjab.

* Indo-Aryans, Vol. II, p. 193.

† pp. 13-15

- (3) 181 B. C. Eukratides ruled in India as well as over Bactria. Mithridates I, seized some of his provinces.
- (4) 180 B. C. The reigns of Euthydemus II., Antimakhos I, and of Pantaleon and Agathocles. The coins of the last two are still found in the Kabul valley, western Punjab and Kandahar.
- (5) 165 B. C. The great Yueh-ti established themselves in Sogdiana by the expulsion of the Saka tribe, which thus dispossessed invaded Bactria.
- (6) 144 B. C. Lassen places Menander about this date.
- (7) 126 B. C. Bactria lost to the Saka tribe and wrested from it by the Yueh-ti.

It is clear from this list of dates, which confirms the statements of Garga in a marked manner, that between 206 B. C. and 165 B. C. many Bactrian kings reigned over the north-western borders of India, and some of them extended their conquests into the heart of northern Hindustan. These Bactrian chiefs seem to have often quarrelled among themselves until at last the Saka tribe, driven from their original homes by the Yueh-ti conquerors, in their turn

attacked and defeated the Bactrians about 165 B. C. and established themselves in Bactria. The Bactrians were the Yavanas of Patanjali and Garga, as they were Greeks who were often styled as Yavanas by the Hindus. The statement of Garga that "there would be dreadful war among themselves and that in the end the Sakas would displace them" is justified by the many little wars among these Bactrians themselves who at last were sent away from Bactria by the Sakas. Mr. R. C. Dutt identifies these Sakas with the Yueh-ti conquerors; but this supposition is unnecessary, if not incorrect, because before the Yueh-ti conquerors came to Bactria, the Sakas were there in power. Garga, it has to be remembered, refers to the Sakas and not to the Yueh-ti. It would appear that when the Bactrians were confronted by the Sakas about 165 B. C. in Bactria, they retired from their Indian provinces in order to meet their new foes who threatened their very hearths and homes. As soon as the Yavanas retired, seven powerful kings are said to have reigned in Saketa or Kosala which, as we know from the Vishnu Purana and the Bhagavatha, was divided into seven parts or 'sapta kosalas.'

The Yavana invasion referred to by Patanjali and Garga occurred therefore a few years before

165 B. C., about which year, however, they retired from their Indian provinces. According to the Puranas, Pushyamitra subverted the Mauryan dynasty and began to reign in northern India 137 years after the accession of Chandragupta to the throne, i.e., in 178 B.C. He is the father of the hero of Kalidasa's *Malavikagnimitra*, who according to the drama "defeated the Yavanas on the southern banks of the Indus." Probably this defeat also contributed to the retirement of the Greeks from the Madhyadesa. Kalidasa represents Pushyamitra as having been engaged in a great sacrifice when the victory over the Yavanas was gained and Patanjali states that sacrifices were being celebrated by Pushyamitra in his time. Moreover Patanjali refers to the Gargas so often as to induce Professor Weber to state that "the Gargas must have played a very important part at the time of the Mahabhashya, in the eyes of the author at all events."* It may also be noted that Garga's annals, which refer the beginning of the Yavana invasion to the time of Salisuka (204—197 B.C.), close rather abruptly with the narration of the destruction of these Yavanas. This fact shows that he could not have lived much later. For all the reasons above set forth, we may

* Indian Literature, p. 252

conclude that Pushyamitra, Patanjali and Garga were almost contemporaries and lived about 165 B. C., the date of the retirement of the Bactrian Greeks from India. We may also suppose that Patanjali and Garga lived sometime before the invasion of Menander in 144 B.C., inasmuch as neither of them refers to the great Bactrian conqueror who overran Northern India and was of such consequence and renown as not only to find an honoured place in Buddhist legends but also, according to Plutarch, to give rise, when he was no more, to a contention among several towns for the custody of his imperial ashes. That Garga lived about 165 B. C. is confirmed by a *Śloka* of his,* quoted by Bhattotpala in his commentary on Brihat Samhita, which means that if the sun were to turn to the north without reaching Dhanishta, it foretold great calamity. Garga is most probably referring in this prophetic strain to the conquest of the Yavanas which was such a calamitous occurrence. As the sun commenced to turn to the north without reaching Dhanishta about the year 216 B. C., when the winter solstice began to occur with the sun in Sravana, he must have lived only a little later when the change began to be felt. For if he had lived long after

* Mr. Tilak's Orion, p. 19

this astronomical variation, he would not have noted it and regarded with any anxiety.

This retirement of the Yavanas is said by Garga to have occurred "at the end of the Yuga." What is the Yuga that he speaks of? I am sure that it refers not to the shortlived five year cycle but to the other Yuga then in existence, the Kali Yuga. Garga himself speaks of the four Yugas, Krita, Treta, Dwapara and Kali, the third ending, and the fourth beginning, with the Mahabharata war. It will be shown, when the subject of the Yugas comes to be dealt with, that the Kali period was originally believed to consist of a thousand years. As the retirement of the Yavanas from India took place about 165 B. C., the Kali Yuga which ended about this time must have begun about 1165 B. C.

Thirdly: Megasthenes, the ambassador of Seleucus at the court of Chandragupta, has recorded in his writings the impressions he received while in India. His writings are known to us only in fragments from the works of Arrian, Pliny, Solinus, and others. Arrian (146 A.D.) quotes the following from Megasthenes: * "From the time of Dionysus to Sandracottus, the Indians counted 153 kings and a period of 6012 years; but among these a republic

* Mc Crindle's *Ancient India* pp. 203 and 204.

was thrice established, * and another to 300 years and another to 120 years." Pliny (41 A. D.), in quoting Megasthenes on the ancient history of the Indians, says: "For the Indians stand almost alone among the nations in never having migrated from their own country. From the days of Father Bacchus to Alexander the Great, their kings are reckoned at 154, whose reigns extend over 6451 years and 3 months."* Solinus (238 A. D.) is reported as stating:—"Father Bacchus was the first who invaded India and was the first of all who triumphed over the vanquished Indians. From him to Alexander the Great, 6451 years are reckoned with 3 months additional, the calculation being made by counting the kings who reigned in the intermediate period to the number of 153." † Thus there are three independent sources from which we can obtain an insight into the ancient chronology of India as known to the Greeks. It has to be noted that the legend of Dionysus or Bacchus and his connection with India is one of the most famous in Hellenic antiquity. Persecuted by the jealous Hera, Dionysus was exposed on Mount Nysa in Thrace from which he took his name (Dionysus=Nysa

*Hist. Nat. VI. XXI. 4, 5. Macrinde's Ancient India, p. 115.

† Mc Crindle's Ancient India, p. 115.

Sprung). In his long travels he is said to have reached India once upon a time, where he spent a few years in subduing its fierce tribes and teaching them, for so the story goes, the elements of cultivation, the pleasures of the grape, and the arts of civilization. In his *Anabasis*, the historian Arrian introduces the name of Dionysus in connection with another Nysa a city near the modern Cabul, which in about 327 B.C. surrendered to Alexander the Great. The troops of the Macedonian conqueror recognising in that city the limit of the conquests of Dionysus praised their leader as having surpassed even Dionysus in the extent of his conquests. Having found in Nysa near Cabul a verbal resemblance to the town of Nysa in Thrace, they naturally supposed that Dionysus must have gone so far east as India, and in this supposition they were confirmed by their tradition. Thus we can understand how the Greeks, always bent on identifying their legendary heroes with those of other countries, came to identify Bacchus (Dionysus) with Ikshvaku, the son of Vaivaswata Manu, who, according to Indian tradition, was the first to establish government and the arts of peace in Aryavarta. The Puranas give almost the same number of reigns from the time of Vaivaswata to the time of Chandragupta or Alexander. The number of kings given by these foreign historians "is eminently satisfactory as it

seems clear that we possess in the Puranas the same lists as were submitted to the Greeks in the fourth century B. C. In the solar lists we have in the Treta Yuga 62 reigns from Ikshvaku to Rama. For the Dwapara age we have three solar lists: one from Kusha to Brihadbala, 35 reigns; another from Dishta to Janamejaya, 33 reigns; a third from the son of Siradhwaja, the father of Sita, to Mahabasi, 34 reigns. In the Kali Yuga we have no complete solar list, but the lunar list gives fifty descents from Jarasandha to the last Nanda. This gives 145 or 146 reigns.* But with regard to the periods given in the three classical accounts, they have hitherto yielded nothing of historical value. Fergusson was of opinion that this part of the statement must be rejected as it gave an average duration of nearly forty years for each reign. "But," says he, "it is satisfactory to find that at that early age, the falsification of the chronology had only gone to the extent of duplication and that the monstrous system of Yugas, with their attendant absurdities had not then been invented." But this is an unsatisfactory method of explaining the figures mentioned by the generally accurate classical historians. When the number of the kings

* Fergusson's History of Indian and Eastern Architecture, p. 712.

given by them tallies with that given by the Puranas. it may be asked how the number of years alone comes to be exaggerated. I believe that, far from being totally inaccurate, the years serve but to confirm the date fixed for the beginning of the Kali Yuga.

It has to be noted that the number of years given by so accurate a historian as Arrian differs from that given by Pliny who lived about a century earlier, and by Solinus who wrote about a century later, than Arrian. It has also to be remembered that every one of these scholars seems to quote from a common source, the writings of Megasthenes. But for the unfortunate destruction of the great Alexandrian library and the misguided vanity of the monks of early Christianity, who erased many valuable writings on the ancient papyrus rolls as to give room for their own productions, we might have been overwhelmed with a wealth of ancient lore and tradition to illuminate many a dark problem relating to antiquity. Thus has been lost to the world the 'Indika' of Megasthenes and we are therefore to be content with the fragments quoted above from the other authors. Arrian states that 6042 years elapsed from the time of Ikshvaku to that of Chandragupta and that "among these" there were republics established for a period of about 420 years. We may suppose that

the total for the reigns of the kings and for the republics comes to about $6042 + 420$ or 6462 years,* a figure which very nearly approaches that given by the other two historians, 6451 years and 3 months. But inasmuch as we have for the latter figure the authority of two authors, one of whom was earlier by a century than Arrian, and inasmuch as both these writers are so exact as to give the number of months also in addition to the years elapsed, whereas Arrian deals vaguely in round figures in speaking of the republics, we ought to be satisfied that Megasthenes, the authority for all the three historians, must have stated that from the time of Ikshwaku to that of Alexander there had elapsed a period of 6451 years and 3 months. It is a matter of common knowledge that Alexander fought with Porus in the year 326 B. C., and left India for good in the year 325 B. C.†

To explain the number of years given by these historians, we shall have to advert to the Saptarshi

* As Pliny and Solinus give 6451 years for the interval between Ikshwaku and Alexander, and as Arrian gives 6462 years for the interval between Ikshwaku and Sandracottus, the two statements may perhaps be reconciled by our supposing that Chandragupta (315 B. C.) began to reign about 11 years later than Alexander's conquest of India (326 B. C.)

† M. Duff's Chronology of India, pp. 8 and 9.

cycle. We cannot at this distance of time explain satisfactorily what exactly our ancients had in mind when they laid down the mysterious proposition that the seven Rishis or the seven stars of Ursa Major moved on from Nakshatra to Nakshatra at the rate of one Nakshatra for every one hundred years. Bentley* supposed it to be a crude way of expressing what to the ancients was the inexplicable precession of the equinoxes. This imaginary motion is thus explained in the Vishnu Purana:—"When the two first stars (Pulaha and Kratu) of the seven Rishis (the Great Bear) rise in the heavens and some lunar asterism is seen at night at an equal distance between them, then the seven Rishis continue stationary in that conjunction for a hundred years of men. At the birth of Parikshit they were in Magha and the Kaliyuga, which consists of 1200 years, then commenced."† The commentator on the Bhagavata Purana says: "The two stars Pulaha and Kratu must rise or be visible before the rest; and whichever asterism is in a line south from the middle of these stars is that with which the seven stars are united and so they continue for one hundred years." Very much the same explanation is given

* Historical View of Hindu Astronomy, p. 65.

† Vishnu Purana, IV. 24

by the Vayu and the Matsya Puranas.* Despite the authority of the venerable compilers of these Puranas, I am led to think that this explanation appears to be fantastic and opposed to astronomical science. It is true that the shifting of the equinoxes consequent on their precession may change the aspect of the stárky sky with reference to the celestial poles. But as a matter of fact, the constellation of Ursa Major, which is stationed between the Leonis and the north pole of the heavens, cannot move on from Nakshatra to Nakshatra in the manner supposed by the Pauranikas. Indeed we are informed by the Puranas and the astronomers, Garga and Varahamihira, † that the Ursa Major was in [i.e., was between the north pole and] the Magha Nakshatra (the Sickle) in the days of Yudhishtira; and as we find it even now to be located nearly in the same position, we may infer that the movement, far from being actual, was merely a convenient method to denote the march of time from the famous epoch of the Pandava Yudhishtira. Thus, if a certain event is stated to have occurred with the Saptarshis, say, in the Visakha Nakshatra, the statement does not signify that the Rishis have actually moved on to Visakha, but only

* Wilson's Vishnu Purana, Vol. IV. 233.

† Brihat Samhita XIII, 2 and 3.

means that the event took place in the sixth century after the epoch of Yudhishtira, Visakha being the sixth Nakshatra from Magha.

We have already seen that the number of Nakshatras popularly in use about the time of the compilation of the Atharva Veda Samhita and Taittiriya Brahmana was twenty-eight, including Abhijit, which Nakshatra was however left out by the Vedanga Jyotisha for enabling it to deal with astronomical phenomena in a scientific manner. But the change from twenty-eight to twenty-seven Nakshatras was confined for a long time to astronomers only. As the moon takes about $27\frac{1}{2}$ * days to make one complete circuit of the earth, the astronomers seem to have preferred the number of 27 Nakshatras, or "mile-stones of the heavens," as they have been appropriately termed, in order to make the moon's progress through each Nakshatra correspond to a civil day as nearly as possible. But for ordinary purposes the number of 28 Nakshatras seems to have been retained, as for instance, in the performance of Nakshatreshti sacrifices. As about the time of Yudhishtira the two Vedic works which refer to the twenty-eight Nakshatras were compiled, the cycle of the Saptarshis, which began with the epoch of Yudhishtira, appears to have

* 27 days, 7 hours, 46 minutes, and 12 seconds.

been originally a cycle of twenty-eight centuries. It is true that in Kashmir, where the Saptarshi cycle is even now prevalent, it is considered to be a cycle of twenty-seven centuries. This belief, however, is due to the fact that the twenty-seven Nakshatra system has become firmly established in India since the time of Aryabhata and Varahamihira. But at the time we are speaking of, namely, the reign of Chandragupta, the old popular way of counting twenty-eight Nakshatras was much in vogue and the Saptarshikala was therefore a cycle of 2800 years.

It is apparent from the Puranas that the different dynasties date from the beginning of the Treta Yuga and that Ikshwaku and Budha flourished at the beginning of the same Yuga. * The Puranas relate nothing of historical interest as having taken place in the first or Krita age which is mainly occupied with the first four non-historic † Avatars of Vishnu. The Bhagavata ‡ says that Pururavas, the first king of the lunar line and the nephew of the first king of the solar line lived at the beginning of the Treta Yuga.

* Warren's *Kala Sankalita*, pp. 358 and 366. Fergusson's *History of Indian and Eastern Architecture*, p. 712.

Bhagavata IX. 14.

† W. J. Wilkins' *Hindu Mythology*, p. 130.

‡ IX. 14. 49.

In the Uttarakanda of Valmiki Ramayana it is related that the Kshatriyas were born in the Treta Yuga.* It is therefore clear that both the solar and the lunar dynasties were supposed to have come into being in the beginning of the Treta Yuga, that is, two Yugas before the commencement of the Kali Yuga. In a subsequent chapter it will be shown, chiefly from references in the Rig Veda, that in Vedic times there existed a cycle of a thousand years, probably called 'Saptarshi Chakra', connected with the constellation of the Saptarshis, that there had intervened two such cycles between the time of Ikshwaku and that of Yudhishtira, that these two cycles were afterwards converted into the Treta and Dwapara Yugas of later chronology, and lastly that this Saptarshichakra was the direct parent of our Saptarshi cycle of twenty-eight centuries. The informants of Megasthenes, who were aware that two Saptarshichakras or cycles had preceded the war, naturally, though erroneously, supposed that two periods of 2,800 years each, or 5,600 years in all, had expired by that epoch. That the Saptarshi cycle was the guiding system of chronology about the time of Chandragupta is proved by a verset of Garga

* Ch. 74.

† Brihat Samhita, XIII. 2 and 3.

See also Vishnu Purana IV. 24., where the age of Nanda is fixed in a similar manner.

which uses the Saptarshi periods to fix the date of the Saka (*sic*) kala. As Megasthenes gives 6451 years for the period between 'Ikshwaku and Alexander the Great and as 5,600 years were supposed to have expired at the beginning of the Kali Yuga, 6451-5600 or a duration of 851 years must have been the period represented to Megasthenes as having expired since the commencement of the new era. Since Alexander left India in 325 B. C., the Kaliyuga must have commenced, according to the informants of Megasthenes, in the year $851 + 325$ or 1176 B. C.

There are five important eras at present in use among Hindus in India of which the Vikrama and the Salivahana are the latest. The Saptarshi era is even now prevalent in Kashmir and the Kali is used generally in the rest of India. But the Malabar country is also guided by another era, called after Parasurama, which is also known as the Quilon or Kollam era. According to approved tradition it is a cycle of a thousand years and the present cycle, believed to be the fourth, began in the year 1825 A. D. But curiously enough, Mr. Logan thinks it to be an era beginning in 825 A. D., because no doubt that supposition suited his theory regarding the date of Cheruman Perumal, the supposed royal convert to Islam. Many scholars, like Drs. Caldwell, Gun-

dert and Burnell, have tried to explain the true origin of the Kollam Andu, but their explanations do not seem to be satisfactory. The late Mr. P. Sundram Pillai discussed these opinions in a paper contributed to the *Madras Christian College Magazine* (Feb. 1897), and finding them unsatisfactory, suggested that the Kollam Andu was "a modification of another older era current in Upper India under the name of Saptarshaya or Nastra Samvatara. The peculiarity of this northern era is that though it is to-day 1072, it is spoken of as 72, so that omitting the hundreds it would be found to be identical with our Malabar year except for four months beginning with Mecha." The Saptarshi begins with the month of Mecha; but the Kollam begins with Kanya in the north, and with Simha in the south, of Malabar. Mr. Sundram Pillai explains this divergence by supposing that in all probability the astronomers "found it necessary so to amend the northern luni-solar year in order to convert it into a purely solar one as the Kollam year professes to be." Mr. Sundram Pillai, however, ignores the fact of the Kollam Andu being a cycle and believes that it was adopted about 425 A.D. from the countries using the Saptarshi era. This is certainly a misconception and is due to the fact that the Kollam Andu at present counts also the thousand years of the last cycle in addition to the expired years

of the present cycle. . Thus the Kollam Andu for July 1901 is the 76th year of the fourth cycle ; but it is now written as 1076 of the Kollam era. On the contrary, Lieutenant Col. Warren, who wrote his work, the learned Kalasankalita, just about the beginning of the present cycle in 1824 A. D., says of this Andu, " that there had expired on the 14th September, 1800, two cycles of a thousand years each and 976* years of the third cycle". Mr. R. Sewell states in his Indian Calendar † that the years of the Kollam Andu "run in cycles of thousand years. The present cycle is said to be the fourth. If there were really two cycles, ending with the year 1000, which expired 824-5 A. D., then it would follow that the Kollam era began in Kali 1927 current or the year 3528 of the Julian period." Warren relied on a still earlier authority, Dr. Buchanan, who stated " that the inhabitants of Malayala reckoned time in cycles of thousand years from 1176 B.C. and that in September 1800 A.D., there were two cycles and 976 years expired of that era."‡ We have therefore the authority of three eminent writers, two of whom lived before the commencement of the present cycle, to the

* Must be 975 years. Kalasankalita, p. 374. See Sewell's Indian Calendar, p. 45, footnote.

† P 45.

‡ Must be 975 years. Kalasankalita, p. 298.

effect that the Kollam era is really a thousand year cycle beginning in August or September 1176 B. C.

Not only is the Kollam Andu a cycle of a thousand years but it is also identical with the old Saptarshi cycle which is referred to by Albiruni (1030 A.D.), Kalhana (1148 A. D.) and the Puranas. As many manuscripts in the Deccan College are said to be dated in the Saptarshi era, this era seems to have once been much more widely used than at present. Though the Kashmirians now state that this era began in 3076 * B. C., it will be shown in a later chapter that about the time when the chronological portion of the Vishnu Purana was reduced to its present form, the Saptarshi era was supposed to begin a hundred years earlier, or in 3176 B. C., that the Vedic 'Saptarshichakra' cycle of a thousand years, the first cycle of which began in 3176 B. C. and the second cycle of which ended in 1176 B. C., was the direct parent of, and was immediately followed by, the modern Saptarshi kala. The Kollam Andu too is a cycle of a thousand years and began in 1176 B. C. Is it not then most likely that both the Saptarshi and Kollam cycles are almost identical? The earliest starting point for the modern Saptarshi kala is the

* R. Sewell's Indian Calendar, p. 41.

“birth of Parikshit when the Rishis were in Magha and the Kali Yuga then commenced.” * Thus the Puranas identify the Saptarshi Kala with the Kali Yuga. As the Kollam era has been identified with the Saptarshi era, we may safely conclude that the Kollam Andu, the Saptarshi Kala, and the Kali Yuga, all commenced in 1176 B.C.

The Kollam era seems to have been brought into Malabar by the Aryan Namburi immigrants at some remote period in the annals of southern India. “Everything about the Namburi society is hoary with age,” says Mr. V. Nagam Aiya in his report on the Census of Travancore. What has been altogether forgotten by the Hindus in the rest of India, Kashmir alone excepted, is still retained by these extremely conservative people of Malabar. But the very same reason which accounts for the disappearance of this era in the rest of India also contributed to the origin of the era being forgotten in Malabar. In the beginning of the sixth century A.D., the astronomers made the Kali Yuga begin in 3102 B.C., and the authority of Aryabhata and Varahamihira was supreme enough to cause the spread of the new doctrine throughout the length and breadth of India. The people of Malabar, who were led therefore to believe that the

* Vishnu Purana, IV. 24.

Kali began in 3102 B.C., connected their era, which really began with the commencement of the Kali era in 1176 B.C., with the venerable name of Parasurama, the supposed leader of the Aryan immigration into Malabar.

It is strange that, to this day, it is a Namburi Brahman that is the ministering priest at the shrine of Kedarnath in the Himalayas and at Jagannath in Orissa. It is also curious that not only in chronology, but also in architecture, laws and usages, the northernmost parts of India have much in common with the Malabar country. Dr. Fergusson and Mr. J. D. Mayne are both struck by this remarkable coincidence. Whatever be the explanation for this resemblance, we may be perfectly sure that the extremely conservative tendency of Malabar has very largely helped to preserve it. Of all the peoples in India, the Malayalis, Brahman's and non-Brahmans alike, still preserve their respective old institutions with a pious heroic conservatism worthy of a better cause. If Western education has undermined this pathetic attachment to the old order of things, we can only hope that those to whom has been entrusted the shaping of their new destiny will consider the claims of the old in paving the way for the new.

CHAPTER II.

THE DATE OF THE MAHABHARATA WAR.

IN the last chapter it was attempted to fix the date of the beginning of the Kaliyuga from testimony derived from four different sources.

From the data furnished by the astronomical work called Vedanga Jyotisha, it was inferred that the era must have begun about 1173 B. C. From the statement made by the astronomer Gargacharya, we drew the conclusion that it must have commenced a few years before 1165 B. C. On examining the figures given by the classical historians, we found that it began 851 years before the date of Alexander's stay in India, or in 1177—76 B. C., a date which, we saw, was confirmed by the evidence of the Malabar Kollam Andu which commenced in 'August or September,' 1176 B. C. As the Vedanga Jyotisha, which refers to the period of the commencement of the Kaliyuga, begins the year with the winter solstice,* we may well suppose that the Kaliyuga began with the winter solstice immediately prece-

* Yajur Vedanga Jyotisha: Verses 6 and 7.

ding the commencement of the Kollam Andu, or at the end of 1177 B.C. It is proposed in this chapter to examine fresh materials and to fix the date of the great Mahabharata war which was fought a few years before the beginning of the Kaliyuga.

It is unanimously declared in the Mahabharata* and in all the Puranas † that as long as Sri Krishna remained on earth, the Dwaparayuga continued and with his death commenced the Kali age. "As long as the earth was touched by His holy feet, the Kali age could not affect it. • • But the day that Krishna shall have departed from the earth will be the first of the Kaliyuga."‡ On hearing of his death, his devoted admirers, the Pandavas, did not care any longer to hold the reins of government, which indeed they would have already resigned, but that their grandson and heir, Parikshit, had until then been too young to be trusted with the cares of an empire. The sweets of the purple had, in fact, never § been acceptable to them, inasmuch as their victory was

* Mahaprasthanika parva, I, 2 and 7.

† Wilson's translation of Vishnu Purana, Vol. IV, p. 234.

‡ *Ibid.*

§ Santi Parva, VII, XXV, and LXXV.

bought at too dear a price and only after a terrific carnage of all their dearest friends and relatives in that tremendous war. The death of Sri Krishna proved to be the proverbial last straw and the Pandavas once for all determined to quit a world fraught with so many painful recollections. There is a pathetic fable current in Southern India that when Yudhishthira was ruling his empire with even-handed justice, he suddenly found on a certain day an unjust claim set up before him by a litigant who, only the day before, had been pleading the cause of righteousness. The virtuous monarch was astounded by this unprecedented and sudden decline in virtue and attributed it to the influence of the Kaliyuga, the dawn of which was then being expected. He forthwith resolved never more to witness the vices of the sinful age and, having established Parikshit in the sovereignty of his realm, departed with his brothers on his grand Mahaprasthanas. Whatever may be the reason that ultimately induced the Pandavas to retire from their worldly duties, it is evident that they were enabled to carry out their resolve the more easily by the fact that Parikshit had just then arrived at age. It has to be remembered that in precocious India Hindu lawyers fix the

age of majority in the sixteenth year. As Parikshit was born soon after the close of the war, the beginning of the Kali age, which is coeval with the coronation* of Parikshit, must be placed about sixteen years after the war; and if the Kali commenced in 1177 B. C., Parikshit must probably have been born in 1193 B. C. and the war should have taken place towards the end of the year 1194 B. C.

But the epic relates that the race of Sri Krishna was destroyed 36† years after the war and that the Pandavas left their kingdom soon after at the beginning of the Kaliyuga. The compiler of the epic, who wants us here to believe that the Kali commenced 36 years after the war, on another occasion‡ places the beginning of the Kali at the time of the war itself. It is not safe to rely on every statement contained in the epic, because it is neither the work of one author nor of one age.§

* Wilson's Vishnu Purana, Vol. IV. p. 232.

† Maṁsala Parva, I. 1 and 3

‡ Bhagavatya Parva, Sec CXIII.

§ Telang's Introductions to Bhagavat Gita, Sanat-sujatiya, and Anugita in the Sacred Books of the East Series, Vol. VIII; Wilson's Introduction to Vishnu Purana; Prof. Macdonell's Sanskrit Literature, p. 235 Weber's Indian Literature, pp. 187 and 188; Monier Williams's Indian Wisdom, XIII. p. 371.

We can find other statements in the epic nearly contradicting the statements above set forth. The Mahabharata states that after the expiry of fifteen years after the war, old Dhritarashtra left with his wife and Kunti for the forest glades to enable him to lead the holy life of a recluse. In the sixteenth year after the war, the Pandavas are said to have set out on a visit to these old people, taking with them all their male and female relatives. We are told that Uttara, the wife of Abhimanyu, "who had recently become a mother,"* was also among the number, "with her child (Parikshit) in her lap."† It must be borne in mind that Parikshit was conceived sometime before the war, as he was the son of Abhimanyu who had lost his life in the war. The Mahabharata expressly states that Parikshit was in *gremio matris* during the progress of the war.‡ Consequently he could not have been a baby at the breasts in the sixteenth year after the war. As this statement is therefore incorrect, I am disposed to believe that in the sixteenth year after the war the Pandavas started, not on a visit to these old people, but on their last journey, the Mahaprasthanā. Moreover, one may be

* Asramavasika Parva, XV. 10.

† *Ibid.* XXV. 15.

‡ Sauptika Parva, XVI. 7 and 8.

struck by the fact that while much irrelevant and extraneous matter is crowded into the epic, the marriage of Parikshit alone is not mentioned. The reason evidently is that Parikshit was young and unmarried when the Pandavas rather suddenly handed over the kingdom to him on hearing of the death of that great hero-philosopher, that *alter ego* of Pandava Arjuna, Sri Krishna Vasudeva. The Mahabharata concludes with the narration of their last journey and 'ascent to heaven,' and most probably the marriage of Parikshit took place sometime later. Besides, if Parikshit were really 36 years of age at this time, how is it that Yudhishtira placed him at the time of their departure under the tutelage of Kripacharya? It would be more consistent with the general drift of the epic if we hold that Parikshit was about sixteen years of age when he was placed in charge of the Kaurava Empire and that the Mahabharata war occurred about sixteen years before the beginning of the Kaliyuga. We shall presently find that there are other grounds which go to support such a conclusion.

The only indigenous work in all India that can pass for history is the Rajatarangini, the well-known history of Kashmir, written in 1148 A. D.

* Mausala Parva, VII. 14.

by Kalhana Pandit. It states* that the author put together the details deduced from his examination, not only of the *sasanas* of the previous kings recording the consecration of temples and grants to them, but also of the laudatory inscriptions and of *sastras* current in his time. Dr. Hultsch and M. Troyer translate thus the verses 48 and 49 of the first Taranga:—‘Misled by the tradition that the Bharata war took place at the end of the Dwapara(yuga), some have considered as wrong the sum of years (contained in the statement that,) in the Kaliyuga, the kings beginning with Gonanda I. (and ending with Andha Yudhishtira) ruled over the Kasmiras for 2268 years.’† This Gonanda I. was, according to the Rajatarangini,‡ the contemporary of the great Pandavas of the Mahabharata fame. The fifty-second in descent from Gonanda I. was Abhimanyu, the son of Kanishka, whose successor, Gonanda III., was the first of a new dynasty ‘which came to power 2330 years before Kalhana’s time.’§ But as we find in the Rajatarangini that the actuals for the reigns from the end of the reign of Andha Yudhishtira, the last of the dynasty of Gonanda III., to Kalhana’s own time amount to 1329 years, 3 months and 28 days, or roughly

* First Taranga, Verse 15.

† Indian Antiquary, April 1889.

‡ I. 44. § I. 52 and 53.

1330 years, Kalhana must have supposed that the interval between the end of Abhimanyu's reign and that of Andha Yudhishtira's represented a period of (2330—1330, or) 1000 years. From the extract given above, it is clear that in Kalhana's time the belief was current that there had elapsed 2268 years from the time of Pandava Yudhishtira to that of Andha Yudhishtira. Consequently Kalhana gives (2268—1000, or) 1268 years for the reigns of the first fifty-two kings from Gonanda I. to Abhimanyu. We are now in a position to understand what the 'tradition',* referred to by Kalhana actually was. It must have been supposed that 1268 years had elapsed from the time of the coronation of Pandava Yudhishtira, the contemporary of Gonanda I., to the time of Abhimanyu, and that the twenty-one kings of the dynasty of Gonanda III. reigned in all for one thousand years. We may go even further and infer that the original tradition was to the effect that 1268 years had elapsed from the time of the great war to the time of Kanishka's successor, and that the period of 1000 years, allotted to the twenty-one kings of the second dynasty, is a later addition, regard being had to the large average for each reign and the roundness of the figure. As

* I. 48 and 49.

a matter of fact, Kalhana himself actually states that it is "thought" that the fifty-two kings down to Abhimanyu reigned in all "for 1266* years."

But we may well be surprised with the actual dates given by the historian. As we may infer from the verses 48 and 49 of the first Taranga, he accepts the old tradition in so far as it stated that 2268 years had elapsed from the time of Pandava Yudhishtira to that of Andha Yudhishtira; but with regard to the other part of the tradition, namely, that Pandava Yudhishtira lived at the end of the Dwapara Yuga, Kalhana does not accept it. The reason for Kalhana's standpoint was that, in his day as now, the Dwapara was supposed to have ended, and the Kaliyuga to have begun, in 3102 B. C., whereas he placed greater reliance on a verset† of Garga, quoted in Varahamihira's *Brihat-Sambhita*, which he interpreted, erroneously as will shortly appear, as meaning that Yudhishtira commenced to reign 2526 years before the era of Sali-vahana, or in 2448 B. C. As Abhimanyu lived 1268 years after Pandava Yudhishtira, Kalhana therefore placed him in (2448—1268, or) 1180 B. C. Since Kanishka and his successor Abhimanyu lived in the first century after

* Evidently a mistake for 1268 years. I. 54.

† *Brihat Sambhita*, XIII, 3 and 4.

Christ, it will be readily seen that the false figures given by Kalhana for Abhimanyu and all the subsequent kings down to the sixth century A. D. can be traced to his mistaken interpretation of the tradition and of the verse of Garga referred to by him.

The verse of Garga will be shortly discussed in another connection. But at present it is enough to concern ourselves with Kalhana's premises, and not with his dates. As we have seen, he proceeded on an ancient tradition that from the time of Yudhishtira to the time of Abhimanyu, the successor of Kanishka, there was an interval of 1263 years. Though the late General Cunningham thought that the Vikrama era dating from 57 B.C. began with Kanishka, yet almost all Sanskrit* scholars are now agreed that he lived in the first century after Christ and that probably the Saka era, which began on the 3rd of March 78 A. D., dates from this influential monarch. Without, however, entering into this vexed question, we may broadly state that Kanishka is proved by coins† to have reigned down to 40 A. D. Whether or not the era

* See M. Duff's *Chronology of India*, p. 21, where all the authorities are collected.

† Lassen in *Indische Alterthumskunde*, II, 413, quoted in Weber's *Indian Literature*, pp. 218 and 219.

of Salivahana dates from Kanishka, it is clear that Abhimanyu must have been reigning about the commencement of that era in 78 A. D. If so, Yudhishtira, who lived 1268 years earlier, must have begun to reign about (1268—78, or) 1190 B.C. As the* coronation of Yudhishtira took place soon after the close of the war, we may suppose that the Mahabharata war also was fought about the year 1190 B.C.

In the year 476 A. D. was born the greatest of Hindu astronomers, Aryabhata by name, whose fame spread not only in India and Arabia but also in the vast dominions of the Greek Empire of Constantinople. He was known to the Arabs under the name of Arjabahr and to the Romans as Andubarius or Ardubarius.† He was the first in India to promulgate the bold theory that it was the earth ‡that revolved round the sun. His calculation of ‡the circumference of the earth and his explanation of the phenomena of the eclipses‡ prove beyond doubt that he richly deserved all the encomiums showered upon him by Hindus and foreigners

* Santi Parva, XLI. 23.

† 'Chronicon Paschale,' quoted in Weber's Indian Literature, p. 255.

‡ Dutt's Ancient India, Vol. II. p. 243.

alike. He is reported to have stated* "that the line of the Saptarshis intersected the middle of Magha Nakshatra in the year, of Kaliyuga 1910," i.e., 1192 B.C. It has already been shown that the Puranas† relate that the Rishis were in the very same position at the birth of Parikshit. Combining the testimony of the Puranas with that of Aryabhata, we may readily infer that Parikshit was born about 1192 B.C. As the war took place at the most a few months earlier than the birth of Parikshit, it might have occurred about 1193 B.C.

We arrive at the very same result if we take into consideration the number of kings who, according to the Puranas, occupied the throne of Magadha from the time of the war to the accession of Chandragupta. The Vishnu Purana states what the other Puranas mainly agree in recording, namely, that the nine Nandas reigned for a hundred years, that the ten Saisunagas of the next previous dynasty reigned for 362 years, that the five kings of the still previous Pradyota dynasty occupied the throne for 138 years, and that this last dynasty succeeded the famous Barhadratha dynasty, twenty-two kings of which occupied the throne of Magadha since the date of the War. Thus we get 100

* Warren's *Kala Sankalita*, p. 380.

† See Wilson's Translation of Vishnu Purana, Vol IV, p. 33.

years for the Nandas and 500 years for the two previous dynasties. We have to bear in mind that it is unsafe to implicitly believe in everything that the Puranas relate. It is rather our duty to "prove all things and hold fast that which is good." The number of kings given by them is probably correct inasmuch as it is very probable that the same number was reported to the Greek Ambassador Megasthenes. But we have to pause before accepting the periods. At first sight one would remark the round figures for the periods allotted to these dynasties, namely, 100 years for the Nandas and 500 years for the Pradyotas and Saisunagas. What, however, strikes one most is the large average number of years for each reign. The very same Vishnu Purana gives 137 years for the ten kings of the later Maurya dynasty, 112 years for the ten kings of the Sunga dynasty, and 45 years for the four kings of the Kanwa line. The average number of years for each king of these post-Chandragupta dynasties is about 12 years. But the average for the Pradyota dynasty is about 28 years and that for the Saisunaga about 36 years! As for the Nandas, it is scarcely probable that a father and his sons could have reigned for one hundred years, especially when we remember that the last surviving sons did not die a natural

death, but were extirpated by Chandragupta with the aid of the scheming Chanakya.* As the years given by the Purana for these pre-Chandragupta dynasties are therefore not trustworthy, it would be unsafe to deduce therefrom the probable date of the war. It is possible that the Puranas may have left out insignificant reigns, or that these ancient kings were more robust and long-lived than the kings of the post-Chandragupta period; but even on that supposition, the averages are still too large.

In hardy old England, from the Norman invasion to the beginning of the twentieth century, thirty-five monarchs had reigned, the commonwealth counting as one king, for a period of 835 years, and the average for each reign is about twenty-three years. From the accession of Hugh Capet of the House of Valois to the execution of Louis XVI, France † had been ruled over by thirty-three kings for a period of (1793-987, or) 806 years, yielding an average of about twenty-four years. Eight kings had ruled over Prussia † from the accession of Frederick I. to the death of Frederick II. in 1888 A. D., or for a period of 187 years with an average of about twenty-three years. In Russia, † from the time of Ivan III., there

* See Visakhadatta's *Mudra-Rakshasa* and Dhundiraja's Introduction thereto. *Mahawanso*, Ch. IV.

† George's Genealogical Tables of Modern History..

had reigned twenty-two monarchs up to the accession of the present Emperor Nicholas II. for a period of (1894—1462, or) 432 years, which results in an average of about nineteen years. In old Japan, the present Emperor Mutsu Hito is supposed to be "the 123rd of the Imperial line, his ancestor Jimmu Tenno, the first Emperor, having established the dynasty which has lasted unbroken for 2500 years."* This gives about twenty-one years for each king of this long-lived dynasty. Thus we have the averages for each of the five foremost Powers of our Hemisphere, 23 years for England, 24 for France, 23 for Germany, 19 for Russia, and 21 for Japan. We may not be far wrong if we take the average of these averages, i.e. about 22 years, as the probable duration of each reign of the pre-Chandragupta dynasties. There were twenty-two Barhadrathas, five Pradyotas and ten Saisunagas, or thirty-seven kings in all, from the time of the War to that of the Nandas and they might therefore have reigned for about (37×22 , or) 814 years. Moreover, according to the Buddhistic 'Mahawanso,' composed by Mahanama at about 460 A. D., Mahapadma Nanda, called Kalasoko in the chronicle, reigned for twenty years and

* Rev. Herbert Moore's Half-hours in Japan, p. 250.

“had ten sons. These brothers conjointly ruled the empire righteously for 22 years. Subsequently there were nine brothers: they also according to seniority righteously reigned for 22 years.”* That is to say, the Nandas reigned in all for a period of $(20 + 22 + 22, \text{ or } 64 \text{ years})$, a figure more likely to be correct than the Puranic 100 years. Thus, according to our method of reckoning, the War must have happened about $(814 + 64, \text{ or } 878 \text{ years before Chandragupta, or at about } (878 + 315 \dagger, \text{ or } 1193 \text{ B. C.})$

We have stated above that there was an interval of about 814 years between the War and the accession to the throne of Mahapadma Nanda. But the Vishnu Purana gives 1015‡ years for the period or about 200 years more than our figure. The compiler of the Purana appears to have arrived at 1015 years by supposing that a round period of 1000 years elapsed from the commencement of the Kaliyuga to the time of Nanda's accession and that the Kali began 15 years later than the war. If this surmise of ours be correct, we may well suspect the genuineness of the interval of a round period of a thousand years between the beginning of Kali and

* Turnour's Mahawanso, Ch. IV.

† Max Muller's Ancient Sanskrit Literature, p. 298.

‡ Vishnu Purana, IV. 24

the coronation of Nanda. Moreover, the Purana period of 1015 years for the 37 kings between the War and the coronation of Nanda yields an improbable average of a little over 27 years. That the author deals vaguely in round figures is evident from his giving 100 years for the Nandas, 500 years for the Pradyotas and Saisunagas, and 1000 * years for the Bārhadratha dynasty; and this last figure directly conflicts with the other statement that 1015 years intervened between the war and the end of the Saisunaga dynasty.

There is another statement in this Purana to the effect that the Saptarshis, which are supposed to move at the rate of one Nakshatra for every hundred years,† had moved ten Nakshatras from Magha to Pūrvashada during this interval, which therefore comes to $(10 \times 100, \text{ or }) 1000$ years. It will be apparent that this supposed movement was arrived at by the author, not by its having been previously actually observed and noted, for such a movement is astronomically impossible, but by his deducing it from his other statement, contained in the immediately preceding verse, that 1015 years had elapsed during this interval. In fact the author seems first to have had in mind that the Kali began 15 years

* Vishnu Purana, IV. 23.

† Vishnu Purana, IV. 24.

after the war and that 1000 years elapsed from the beginning of the Kali era to the accession of Nanda to the throne of Magadha, and next to have deduced therefrom the proposition that the Saptarshis, which were in Magha at the time of the war, had moved on to Purvashadha at the coronation of Mahapadma Nanda.

In chapter XIII of the Brihat Sambhita, Varahamihira, who was born in 505 A. D., deals with the subject of the Saptarshi cycles. After premising that he quotes from Vriddha Garga, he states:—

आसन्मघासु मुनयः शासति पृथ्वीं युधिष्ठिरे नृपतौ ।

षड्विक्रपञ्चद्वियुतः शककाल स्तस्य राज्ञश्च ॥ ३ ॥

This sloka has been thus translated by 'Dr. Hultzsch * :— "When king Yudhishtira ruled the earth, the (seven) seers (Ursa Major) were in Magha ; the Saka era (is) 2526 (years after the commencement) of his reign." He comments on it by saying: "Accordingly the coronation of Yudhishtira took place 2526 years before the commencement of the Saka era, or at the expiration of the Kaliyuga-Samvat 653 and in B. C. 2448." It may be observed that Dr. Hultzsch agrees with Kalhana in †

* Indian Antiquary, VIII, p. 66.

† Rajatarangini, I. 66.

thinking that the Yudhishtira era is different from the Kali era. On the other hand, Jyotirvidabharana, an astronomical work ascribed to Kalidasa, but which scholars place in the sixteenth century * A. D., tells us that in the Kaliyuga six different eras will flourish one after another; the Yudhishtira to last for 3044 years from the beginning of Kali, the Vikrama era to last for 135 years afterwards, the Salivahana for 18000 years after the Vikrama era, and the Vijaya, Nagarjuna, and Bali eras to be current in the rest of the Kaliyuga. Of course these three last eras are fictitious and have nothing to do with our enquiry. But I quote the Jyotirvidabharana only for the purpose of showing that Hindus have all along thought that the Yudhishtira era commenced with the Kali. So also Aryabhata computes by the era of Yudhishtira,† which corresponds to the Kaliyuga. It is not therefore possible to concur with Kalhana and Dr. Hultsch who place the beginning of the Yudhishtira era "at the expiration of the Kaliyuga-samvat 653 and in B. C. 2448."

We have to consider what the word 'Sakakala' really means. It has been already proved that

* Weber's Indian Literature, p. 201.

† Colebrooke's *Mis: Essays*, Vol. II, p. 428. Weber's *Indian Literature*, p. 260.

Garga, the author of the sloka, lived about 165 B. C. Even granting, for the sake of argument, the contention of Dr. Kern that Garga lived in the first century B. C., it is not possible that Garga could have meant by 'Sakakala' either the Vikramasamvat, which began rather subsequently in 57 B. C., or the Salivahana Sakabda, which commenced still later in 78 A. D. It may also be noted here that it has not been as yet proved that the Vikramasamvat era had been in use ever since 57 B. C. On the contrary, scholars like Fergusson,* Max Muller† and Weber‡ are of a different opinion. Besides the Kali or the Saptarshi era, there was in the days of Garga only one other prominent era in existence, namely, the era of Nirvana, "which," says Fergusson§ in connection with a different subject, "as far as I can see was the only one that had existed previously in India." The era of Mahavira, the founder of Jainism,

* History of Indian and Eastern Architecture, p. 46; Fergusson's 'On the Saka, Samvat and Gupta Eras', pp. 11-16.

† India, what can it teach us. 1st edition, note G; and Preface to 2nd edition, p. XVII.

‡ Indian Literature, p. 202.

§ Fergusson's History of Indian and Eastern Architecture, p. 742.

beginning in 527 B. C., might have been then in existence; but the Jain religion was only confined comparatively to a few and its era was not much in evidence before the public. The era of Buddha's Nirvana was, on the other hand, very widely known both by reason of the intrinsic merits of His beautiful creed and of its constitution as the State Religion during the time of Asoka the Great. In a Tibetan work a schism * is recorded as having occurred under a 'Thera Nagasena' 137 years after the Nirvana; Chandragupta is recorded to have ascended the throne 162 years† after the Nirvana; the inauguration of Asoka is stated to have taken place 218 years † after the Nirvana; and the Dipawanso, a history of Ceylon written in Pali verse about the fourth century A.D., makes use of the era of Nirvana in its computations. Therefore the era of Buddha's Nirvana which was in current use in the time of Garga might have been probably referred to by him.

It is well-known that Gautama Buddha was known by the name of Sakya Muni and that his paternal grandfather was also known by the name of Sakya. Every reader of that noble classic, Sir Edwin Arnold's *Light of Asia*, is

* The Theosophist, Nov. 99, p. 109.

† Max Muller's *Ancient Sanskrit Literature*, p. 299.

aware that the race to which Gautama belonged was often called by the name of Sakyas, as for example, where king Suddhodana was asked by his minister to

“ Command a festival

Where the realm's maids shall be competitors

In youth and grace and sports that *Sakyas* use.”

Says Mr. R. C. Dutt, “A little to the east of the Kosala kingdom, two kindred clans, the Sakyas and the Koliyans, lived on the opposite banks of the small stream Rohini. * * Kapilavastu was the capital of the Sakyas.* ” The followers of Gautama Buddha were often spoken of as ‘Sakyaputriya Sramanas’, in contradistinction possibly to the Sramanas of other sects. We may therefore infer that the era of Gautama Buddha was probably known as ‘Sakya Kala’ in those times. The era could not have been called by the name of ‘Nirvana Kala’, for the evident reason that the term might equally apply to the Nirvana of Mahavira, the Jaina Saint.

The sloka quoted above is written in the usual Arya metre, whose nature is thus defined in works on Sanskrit rythm :—

यस्याः पादे प्रथमे द्वादशमात्रास्तथा तृतीयेषु ।

अष्टादश द्वितीये चतुर्थके पञ्चदश सार्या ॥

* Ancient India, Vol. I. p. 320.

which means: "The first and the third quarters must each contain twelve matras, or syllabic instants (one being allotted to a short vowel and two to a long one), the second eighteen and the fourth fifteen". The sloka next following the one in question is the fourth in the chapter and satisfies the conditions required. Similarly, the first two slokas of the chapter are in faultless rythm. But with regard to the third sloka, which is the one under discussion, only the first three quarters satisfy our rythmic requirements. The last quarter, शककालस्तस्य गङ्गा, is however short by one matra. It is inexplicable how scholars, including Kalhana, could have hitherto overlooked such a glaring slip. From the fact that the Rajatarangini also makes this mistake, we may infer that the error might have been in existence from a very long time. It strikes me that the only way of correcting the error is by the insertion of the letter 'y,' which has been somehow omitted, between the letters 'k' and 'a' in the word 'Saka.' If the expression 'Sakakala' be corrected into 'Sakyakala,' or 'Sákyakala,' the sloka becomes perfect and we shall have then the best of reasons to suppose that Garga refers to the era of Nirvana. 'Sakyakala' or 'Sákyakala' would then denote the epoch of the Sakyas, or of

the Sakya prince Gautama, or of the Buddha called Sakya Muni. Most probably some early copyist, better acquainted with Sakakala than with Sakyakala, changed the latter into the former which he might have thought to be the correcter form. Even without the aid of such a correction, 'Sakakala' may be considered to be a corruption of the word 'Sakyakala.' Thus in any case the era of Buddha's Nirvana is the one most undoubtedly referred to.

We have next to determine what is meant by the phrase षड्द्विकपञ्चद्वि. As we have seen, Dr. Hultzsch interprets it as meaning 2526. But if only we look into the expression a little closely, we may arrive at quite a different result. In the Sanskrit language it is usual, when numerical expressions are employed, to put the units first, the tens after the units, the hundreds after the tens and the thousands after the hundreds, and so on. Thus, for instance, the number one hundred and twenty-five is written thus: five two one. Dr. Hultzsch thinks that the expression now being discussed is written thus: Six two five two, which, expressed in English figures, denotes 2526. But we have to take note of the letter 'क' in the middle of the expression षड्द्विकपञ्चद्वि. द्विक means 'twice', 'two times', 'a collection of two,' but not

'two' simply. If 'क' were a mere expletive used for the purpose of metre, it may be asked why द्वय, which means 'two' simply, has not been used in preference to the ambiguous द्विक. When affixed to numerals the termination क is not an expletive and generally denotes 'so many times.' Such a precise mathematician like Garga cannot be expected to use the particle unnecessarily, especially when quite a different meaning is thereby rendered possible. In my opinion, the word पञ्चद्विक means 'twenty-six times,' and पञ्चद्वि means 'twenty-five': in other words, the whole expression signifies "twenty-six times twenty-five," or 650.

If it be asked why such a round-about method of expression has been adopted to denote the simple number of 650 years, it may be urged in reply that Garga professedly computed here by the Saptarshi cycle which denoted the lapse of every one-hundred years by a new Nakshatra, and gave twenty-five years for each Nakshatrapada, into four of which a Nakshatra was then, as we have already seen, usually divided. If the Rishis had moved $6\frac{1}{2}$ Nakshatras from the time of the coronation of Yudhishtira to the Nirvana of Buddha, that would be more appropriately expressed as the movement of the Rishis through twenty-six

padas and the period denoted thereby would be put down as twenty-six times twenty-five years.

We have now come to understand by the sloka that 650 years had elapsed from the time of Yudhishtira to the beginning of Sakyakala or the era of Gautama's Nirvana. It may here be stated that though Max Muller offers very fair reasons for fixing the date of Nirvana in 477* B. C., yet "there is perhaps no single point in the whole early history of India on which the chronicles of Ceylon and Further India are so distinct and unanimous than that Buddha died,—or as they express it, attained Nirvana—at the age of eighty years in the year 543 B. C."† The Dipawansa, the Pali chronicle of the fourth century A. D., computes by the era of Nirvana beginning in 544-3 B.C. But we are not concerned here with the question whether this date or Max Muller's date, 477 B.C., be the true date for the Pari-Nirvana of Buddha. It is enough to note that Burma, Siam and Ceylon are all unanimous in giving the former date and that such widespread unanimity of opinion cannot be expected unless the era of 544-3 B. C. had existed from a very long time. In my opinion, the date given by the

* Ancient Sanskrit Literature, p. 299.

† Bigandet's Life of Gautama, p. 323.

Buddhists of these three countries was the one current at the time of Garga. If the year 544-3 B. C. be incorrect, and the year 477 B. C. be the true date, we can only say that the error must have arisen long before the time of Garga who lived shortly after the lapse of three centuries from the Nirvana of Gautama Buddha. We are now in a position to understand the full force of Garga's statements that the Saptarshis moved by one Nakshatra in every hundred years, that they were in Magha when Yudhishtira reigned, and that 650 years had elapsed from that time to that of Buddha's Nirvana. These statements indicate to us that the coronation of Yudhishtira, and therefore the Mahabharata war, took place in the year (544 or 543 + 650, or) 1194-3 B.C.

There prevails in almost all parts of India what is generally known as the Brihaspati sixty-year cycle. The utility of such a small cycle lasting for about the lifetime of man, each year of which is designated by a special name, is patent to every one who has lived in India. To a European, its efficacy would best be demonstrated if he be asked how his countrymen would feel in case the twelve months of the year had no names given them, but had to be denoted by numerical figures. This cycle seems to have been in use in India

from a very long time*. In commenting on Taittiriya Brahmana, I. 4. 10, Sayana says that this cycle comprised twelve of the ancient five-year cycles, which are so often referred to in the Vedic works† and in the Vedanga Jyotisha. Colebrooke thinks that the period of Jupiter (Brihaspati) was introduced by the ancient Hindus in conjunction with those of the sun and the moon in 'the regulation of the calendar, sacred and civil, in the form of the celebrated cycle of sixty years.‡ As the sun and the moon take about five years to return both to the same position at the beginning of a year, a fact which gave rise to the cycle of the five years, known as *Samvatsara*, *Pariavatsara*, *Idavatsara*, *Anuvatsara* and *Idavatsara* respectively, and as Jupiter makes a complete circuit of the heavens in about twelve years, it is evident that all the three heavenly bodies were expected to return to the same celestial region on the expiry of every sixty years. But in consequence of a correcter knowledge of Jupiter's motions, Northern India has been, for some-

* Warren's *Kala Sankalita*, p 212.

† Taittiriya Samhita, V. 5. 7.; Taittiriya Brahmana, III. 4 11; I. 4. 10; III 10 4. Taittiriya Aranyaka, IV. 19; Vajasaneya Samhita, XXVII. 45

‡ Dutt's *Ancient India*, Vol. II, 242.

ime past, expunging one year of the cycle in every $85\frac{4}{11}$ years, so that, after one such period, the name of the next year is left out and the name of the one following the next year taken to be the next year's name. As no such, evidently a comparatively recent, practice prevails in Southern India, the current year (April 1901 to April 1902), which is the year 'Pramadicha' in the North, is the year 'Plava' in the South.

At whatever time the cycle might have first originated, it appears to me that, when the names therefor were invented, the year of the Mahabharata War, the only famous epoch in the history of Ancient India, was named 'Prabhava,' the name of the first year of the cycle. But the date usually given by the orthodox for the war or for the beginning of the Kaliyuga does not correspond to the first year of the cycle. On the other hand, if we adopt the date given by Garga for the epoch of Yudhishtira, i.e. 1194-3 B. C., we find that the corresponding year of the Jupiter cycle for that date is 'Prabhava,' the name of its very first year.

We have already suggested that the Kaliyuga began at the winter solstice of the year 1177 B. C. We have also seen that, barring the argument based on Rajatarangini which gives us about

1190 B. C. for the war, our other lines of discussion point to 1194-3 B. C. as the probable date of the war. We shall now find that this date is further confirmed by the application of the principles of the Vedanga Jyotisha to certain statements contained in the Mahabharata itself. We may here observe that these statements are not to be explained by the astronomical calculations of modern times, for these were unknown in the days of the war, but rather by the calculations of the Vedanga Jyotisha, which, though cruder, are better applicable to them, inasmuch as the Vedanga is the oldest Hindu astronomical treatise known to us and its astronomical details, as we have seen, relate to the beginning of the Kaliyuga.

In the Swargarohanika Parva of the Mahabharata, we are told that Yudhishtira having observed 'that the sun ceasing to go southwards had begun to proceed in his northward course' * set out to where Bhishma lay on his bed of arrows. After telling Yudhishtira, who had in the meantime arrived, that the winter solstice† had set in, Bhishma said ‡ :—

* Anusasannika Parva, CLXVII. 6

† *Ibid* v. 26.

‡ *Ibid*. v. 28.

माघायं समनुप्राप्तः मासस्सौम्यो युधिष्ठिर ।

त्रिभागशेषः पक्षायं शुक्रोभविष्यति ॥

Babu Pratap Chunder Roy translated it thus:—

“ O Yuddhishtira, the lunar month of Magha has come. This is again the lighted fortnight and a fourth part of it ought by this be over.” Whatever historical weight may be attached to these statements, they may be at least taken to mean that the winter solstice then occurred on the expiry of the fourth part of the bright fortnight in the month of Magha, that is, on the fourth or the fifth day after new-moon. Nilakantha, the commentator of the Mahabharata, thinks that the expression त्रिभाग शेषः पक्षः denotes ‘Magha Sukla Panchami’*, or the fifth lunar day in the month of Magha after new-moon. But Mr. Rangacharya† interprets the sloka to mean that the winter solstice occurred after the expiry of one-fourth part, not of the bright fortnight, but of the month of Magha, and thus he seems to think that the winter solstice took place on the eighth day after new-moon. He makes त्रिभागशेषः qualify मासः, the fourth word in the first line, instead of पक्षः, the next

* Com. on Bhishma Parva, XVII. 2.

† See his article in the *Indian Review* for October 1900

following word. In the first place, the Anuṣṭup verse, in which metre this and the adjoining śloka are written, generally consists of four quarters consisting of eight syllables each. "The fifth syllable of each quarter should be short, the sixth long, and the seventh alternately long and short." But though the fifth syllable in every other quarter in this verse and in all the quarters of the other verses is short, the fifth syllable of त्रिमासरोषःपक्षोयं alone is long owing to the addition of the 'visarga.' If the 'visarga' be left out, the rhythm of the śloka becomes good enough. In that case, त्रिमासरोषपक्षः becomes one word and त्रिमासरोषे cannot but apply to पक्ष. But even without our resorting to this examination of the rhythm of the verse, it strikes me that the novel interpretation of Mr. Rangacharya seems to be a forced one. The first line of the verse is complete by itself, as also the second line. Why should a word in the second line be taken to qualify a distant word in the first line instead of the next following word? The more natural interpretation appears to me therefore to be that given by the learned commentator of the epic and adopted by the translator thereof, namely, that the winter solstice happened on the fifth lunar day after Amavasya in the month of Magha.

It may be observed that the Vedanga states * that at the beginning of every five-year cycle the winter solstice took place on a new-moon day with the sun and the moon together in Dhanishta Nakshatra. In verse 10, "we find an enumeration of the Nakshatras, or rather of the divinities presiding over the Nakshatras, in which the moon stands at the beginning of the ten Ayanas of the Yuga,"† that is, at the ten solstices of a five-year cycle. The ten Nakshatras are Sravishta, Chitra, Ardra, Purvaphoshtapada, Anuradha, Ashlesha, Aswayuj, Purvashada, Uttaraphalguni, and Rohini.‡ But the Mahabharata states that the winter solstice occurred on the fifth lunar day after Amavasya. As according to the Vedanga§ the winter solstice always occurred with the sun in Dhanishta, the Amavasya referred to by the Mahabharata must have occurred with the sun and the moon in Sravana Nakshatra; and as the winter solstice occurred on the fifth day after this, the moon must have been, on the solstitial day, in or near Revati Nakshatra. According to the Jyotisha,|| this position could have occurred only at the

* Yajur recension of Vedanga Jyotisha, v. 5 and 8.

† Dr. G. Thibaut's Vedanga Jyotisha, p. 22.

‡ Verses 10, 32, 33 and 34.

§ Verses 5, 6 and 7.

|| Verses 10 & 32-34.

beginning of the fourth year of a five-year cycle, for it was then that the moon was in *Awayujit*, next to *Revati* Nakshatra. The difference of this one Nakshatra is due to "the imperfections of the elements of the *Jyotisha*." Thus we may infer that the winter solstice following the *Mahabharata* war, and just preceding† *Bhishma's* death, was the fourth of the five winter solstices of a five-year cycle: The particular five-year cycle in which the *Mahabharata* war took place appears to have been the fourth cycle previous to the beginning of the *Kaliyuga* in 1177 B.C., inasmuch as we have found that the *Rajatarangini* points to 1190 B. C., and that all other lines of discussion lead to 1194-5 B. C., as the probable date of the war. Consequently, the winter solstice shortly following the war was the fourth of the fourth five-year cycle preceding the commencement of the *Kaliyuga*, which began, like the five-year cycle, with a winter solstice and with the sun and the moon in *Dhanishta* Nakshatra. In other words, the *Mahabharata* war took place a little before the seventeenth winter solstice preceding the commencement of the *Kaliyuga*, or towards the end of the year 1194 B. C.

* Dr. G. Thibaut's *Varāṇṣa Jyotiṣha*, p. 22.

† *Anusasanika Parva*, CLXVII, 26-28.

To summarize the arguments above set forth :— We were first enabled by the Vedanga Jyotisha to place the beginning of the Kali era approximately at about 1173 B. C.

Secondly; After enquiring into the date of Garga and of the Yavana invasion he spoke of, we noted that he fixed ' the end of the Yuga ' for the retirement of the Greeks from Hindustan. From this statement we inferred that the Yuga, which ended sometime before 165 B. C., must have begun a few years before 1165 B. C.

Thirdly ; In explaining the figures given by the classical historians, we came to the conclusion that the Kāliyuga must have begun in 1177-6 B. C.

Fourthly ; The Malabar era furnished us with another authority for fixing the commencement of the Kali era in 1176 B. C.

Fifthly ; We found that if the Kali commenced at the winter solstice immediately preceding the year 1176 B. C., the details of the Mahabharata would lead us to place the war at the end of the year 1194 B.C.

Sixthly ; The tradition recorded in the Rajataranginī enabled us to fix the date of the war at about 1190 B. C.

Seventhly ; From a statement made by Aryabhata that the Rishis were in Magha in the year

1192 B. C., we inferred that the war might have taken place at about 1193 B. C.

Eighthly ; The average duration of the reigns of the monarchs of the five foremost Powers of our hemisphere served to assist us in fixing the date of the war at about the year 1193 B. C.

Ninthly ; From a sloka of Garga quoted in the Brihat Samhita, we inferred that the war occurred in the year 1194-3 B.C.

Tenthly ; We also found that the first year of the Brihaspati cycle of sixty years actually corresponds, as may naturally be expected, to the date of the war as given by Garga, i.e., 1194-3 B.C.

Eleventhly and lastly ; We applied the elements of the Vedanga Jyotisha to a sloka contained in the Mahabharata, which fixes the day of the winter solstice occurring soon after the war, and concluded that the war should have taken place in the latter part of the year 1194 B. C.

Thus we find all this cumulative evidence derived from different sources converging to the result that the Kali era began at the winter solstice occurring at the end of 1177 B.C., and that the Mahabharata war took place at about the end of 1194 B.C. In arriving at these conclusions, we had the testimony of the only historian that India can boast of who lived in the twelfth century

A. D., of the greatest of the astronomers of India who flourished at the end of the fifth century A. D., of another brilliant astronomer who shone in the second century B. C., and of a versatile Greek historian who was also an ambassador at the court of the first great historic Emperor of India who reigned in the fourth century B. C. We had also the authority of the oldest astronomical work of India which claims to be a supplement to the Vedas, of the Kollam era which forms such a "splendid bridge from the old world to the new," and of the famous sixty-year cycle. We tested these conclusions by what we may call the common-sense process based on the lists of kings contained in the Puranas. During this long and tedious discussion we have also met and disposed of the arguments of those that give an earlier date.

We are particularly fortunate in having been able to find out so many reasons, for in the province of ancient Hindu chronology one is not often able to support one's opinions by more than a few authorities. As we proceed to discuss the significance and the origin of the system of the Chaturyugas, we shall also find further corroborative testimony to the correctness of the views I have herein ventured to put forth.

So far we have been treading on more or less firm ground. But if we attempt to fix the actual days of the year 1194 B.C. when the war may be supposed to have been fought, our authority will have to be the epic alone, by itself an unsafe guide. As has already been remarked, the Mahabharata is unfortunately neither the work of one author, nor of one age. Sir Monier Williams* thought that the compilation must have proceeded for centuries; and Weber says:—"Of the Mahabharata in its extant form, only about one fourth (some 20,000 slokas or so) relates to this conflict and the myths that have been associated with it; and even of this, two-thirds will have to be sifted out as not original, since in the introduction to the work (I. 81.) the express intimation is still preserved that it previously consisted of 8800 slokas only."† "But as to the period," says Weber, "when the final redaction of the entire work in its present shape took place, no approach even to direct conjecture is in the meantime possible; but, at any rate, it must have been some centuries after the commencement of our era".‡ Professor Macdonell, the author of the latest work on Sans-

* Indian Wisdom, Lect XIII. 371.

† Indian Literature, p 187.

‡ *Ibid.* p. 183

krit Literature, assumes "that the original form of epic came into being about the fifth century B.C."*. The late Professor Wilson† considered the probable date of the epic poem to be about the third century B. C.

It has been recently proposed to start an Indian Epic Society mainly for the purpose of sifting out the older portions of our incomparable epic. But the labours of such a Society, when brought to a successful termination, will not, in my opinion, militate against the authenticity of the texts we are presently to discuss. Most of these belong to the war portion of the Mahabharata, which, according to Weber, is recognisable as the original basis‡ of the epic.

We have already referred to a sloka§ of the epic which states that the winter solstice, which took place soon after the war, happened on the fifth day after new-moon in the month of Magha. In the very next preceding sloka, Bhishma tells Yudhishtira that he has been lying on his 'spiky bed' for the previous fifty-eight nights. It may be

* Sanskrit Literature, p. 285.

† Wilson's Introduction to Translation of Rig Veda,
Vol. I, p. XLVII.

‡ Indian Literature, p. 187.

§ Anusasaniya Parva, CLXVII, 28

observed that the bed referred to here consisted of the countless arrows that, shot from Arjuna's Gandiva, stuck into Bhishma's body. As soon as Bhishma fell down mortally wounded, the roar of the tenth day battle ceased; and on the warriors of both the sides assembling to have a look at the wounded soldier, he asked for a pillow to match his heroic 'bed.' "The kings standing there then fetched many excellent pillows that were very soft and made of delicate fabric," seeing which Bhishma "said with a laugh, 'These, ye kings, do not become a hero's bed.'"^{*} Arjuna alone understood the intentions of his grandsire and immediately provided a pillow made of three well-placed arrows to the immense satisfaction of the veteran warrior. Among Hindus it has for long been considered good for one's future state, for death to occur in the period between the winter and summer solstices. The grand old Bhishma did not allow the arrows sticking into his body to be removed lest he might die before the commencement of the auspicious period, but rather preferred to suffer the excruciating pain, to which one with a less magnificent *physique* would have speedily succumbed. So firm was the indomitable will of this stern warrior, this noblest

^{*} Bhishma Parva, CXXI.

flower of ancient chivalry, that he cared little for the terrible agony of these fifty-eight nights and more. How remarkable was the power of religious conviction in those early heroic times !

The war is expressly stated in the epic* to have lasted for eighteen consecutive days. Moreover, in the Dronabhisheka† Parva, Karna is said to have refrained 'from taking part in the war for the ten days' during which Bhishma was the generalissimo of the Kaurava army. In the last chapter of Drona Parva it is stated that 'Drona,' who was the next commander-in-chief, 'was slain after having fought dreadfully for five days.' Karna led the army ‡ for the succeeding two days, and on the night of the next§ day after Karna's death, the war was brought to an end. When Yudhishtira was lamenting the death of Ghatotkacha on the fourteenth night of the war, Vyasa is said to have told Yudhishtira that 'in five days the earth would fall under his sway.¶ From these references also it is clear that the war continued for eighteen consecutive days.

* Asramavasika Parva, X. 30.

† Sections II and V.

‡ Karna Parva, I. 15.

§ Salya Parva, I. 10-13.

¶ Drona Parva, CLXXXIV, 65.

As Bhishma was mortally wounded on the tenth day of the war, as the war lasted for eight days more, and as Bhishma is reported* to have stated on the day of the winter solstice that he remained on his bed of arrows for fully fifty-eight nights, the interval between the end of the war and the solstitial day was fifty days. As a matter of fact, this very † number of days is stated as the period of the stay of the Pandavas in the city of Hastinapur, which they entered on the next‡ day after the war, until they set out on their last visit to Dhi-dhais on the day of the winter solstice. The epic says: "The blessed monarch (Yudhishtira) having passed fifty nights in Hastinapura recollected the time indicated by his grandsire (Bhishma) as the hour of his departure from this world. Accompanied by a number of priests, he then set out of the city, having seen that the sun ceasing to go southwards had begun to proceed in his northward course."§ After Yudhishtira reached Bhishma,

* Anusasana Parva, CLXVII 26 and 27.

† *Ibid* 5 and 6.

‡ Stri Parva, XXVII. Santi Parva, XLI and XLV. The Pandavas desired to pass the period of mourning which extended for a month outside Hastinapura (Santi Parva, I 2); but their intention seems not to have been carried out.

§ Pratap Chunder Roy's Translation: Anusasana Parva, CLXVII. 5 and 6

the latter addressed him in these words: "The thousand-rayed maker of the day has begun his northward course. I have been lying on my bed here for eight and fifty nights."* We may therefore conclude that the winter solstice took place on the fifty-first day from the close of the war.

On the next† day after the close of war, Sri Krishna and the Pandavas paid a visit to the dying Bhishma, whom Sri Krishna addressed in the following words:—"Fifty-six days more, O Kurū Warrior, art thou going to live."‡ One need not be misled by the prophetic nature of this expression and declare it to be of no historic value. It might well have been a fact and put in the form of a prophecy by the compiler of the epic. But it may be asked how Bhishma could have lived fifty-six days after the close of the war, if only fifty days had elapsed from that time to the winter solstice when Bhishma hoped to give up his life-breath. But the explanation appears to me to be simple enough: though the winter solstice occurred fifty days after the close of the war, Bhishma does not seem to have

* *Ibid.* 26 and 27.

† Stri Parva, XXVII. Santi Parva, XLI. XLV. and LII.

‡ Rajadharmanusasana Parva, VI. 10.

died on the solstitial day, when the arrows were extracted from his body, but appears rather to have lingered on till the sixth day after the winter solstice. We have seen that the solstice took place then on the fifth lunar day after new-moon in the month of Magha. It was on the sixth day from this, that is, on Magha Sukla Ekadasi, that Bhishma, "that pillar of Bharata's race," seems to have "united himself with eternity." Tradition asserts that Bhishma died on this very day, and our almanacs even now make note of the fact and call the day by the name of "Bhishma Ekadasi." To this day, death on the eleventh lunar day of the bright fortnight of the month of Magha is held in great esteem, and next to that, death on such a day of any other month. Possibly the supposed religious efficacy rests on the memory of the day of the royal sage's death.

As the fifty-ninth day after Bhishma's fall corresponded to Magha Sukla Panchami, Revati or Aswini Nakshatra,* the day of Bhishma's overthrow, which took place on the tenth day of the war, happened, in accordance with the principles of the Vedanga,† on Margasirsha Sukla Panchami, in Dhanishta Nakshatra; and the Amavasya preceding it happened on the fifth day of the war in Jyeshtha

* *Ante*, pp. 83-4.

† Vedanga Jyotisha, Yajur Recension, V. 31.

Nakshatra. As a matter of fact, Dr. G. Thibaut * gives this very Nakshatra for the last Amavasya but two of the third year of a five-year cycle, which particular new-moon our Amavasya actually is. We may therefore conclude that the war began on the fourth Nakshatra preceding Jyeshtha or in Chitra of the month of Karthica and ended in Rohini Nakshatra in Margasira month.

The Pandavas tried many milder means before they at last resorted to the arbitrament of war; they even proposed to sacrifice their interests to some extent, if war could thereby be averted. Sri Krishna was the last to be sent on a mission of mediation and he started for Hastinapura "in the month of Kaumuda, under the constellation Revati, at the end of the Sarad (autumn) season and at the approach of the Hemanta (dewy season)."† According to the commentator and also to the translator, Kaumuda is the Kartica month. As the latter half of autumn corresponds to the month of Kartica, we may be certain that the statement means that Sri Krishna left for Hastinapura in the Revati Nakshatra of the month of Kartica. His efforts at recon-

* Dr. G. Thibaut's booklet on Vedanga Jyotisha, p. 15—17, Amavasya No. 36.

† Udyoga Parva, LXXXIII, 7.

ciliation having been of no avail, he seems to have returned to the Pandava camp in Pushya Nakshatra, for, as soon as he left Hastinapura, Duryodhana asked his warriors immediately to march the army to Kurukshetra, "For to-day the moon is in the constellation of Pushya". A little before Śrī Krishna's departure from Hastinapura, he proposed * to Karna :

सप्तमाद्यापि दिवसात् अमावास्यामविध्यति ।

संप्रामो युज्यतां तस्यां तामाहुस्तक्रदेवतां ॥

"In seven days will there be new-moon ; let the war be begun on that day which, they say, is presided over by Indra." As the commentator says, "Sakradevatam" denotes the Jyeshtha Nakshatra, which is presided† over by Indra. The verse therefore indicates that the approaching Amavasya was to happen in Jyeshtha Nakshatra. This serves to confirm our inference drawn from other texts, that the Amavasya, which occurred on the fifth day of the war, took place in Jyeshtha Nakshatra. But, to say that the new-moon would occur on the seventh day seems to be certainly wrong, for Krishna was speaking to Karna in Pushya Nakshatra and the Amavasya was said to occur in Jyeshtha, the

* Udyoga Parva, CXLII. 18

† Taittiriya Śambhita, IV. 4 10. Taittiriya Brahmana, I. 5 2

tenth Nakshatra from Pushya. Probably 'सप्तमाद्' is an error for 'दशमाद्.'

The war, however, did not begin in Amavasya as suggested by Sri Krishna, for, as we have seen, Duryodhana moved out his army to Kurukshetra on Pushya Nakshatra. The Pandavas * too seem to have marched out of Upaplavya on the very same Pushya. Both the contending parties were in such a hurry to march their armies to the battle-field, because Pushya Nakshatra was considered auspicious for such purposes. Yet, it was not possible to begin the actual fighting on the very same day. Much remained to be done before the armies could meet each other in battle array. If Sri Krishna returned from Hastinapura with the answer of Duryodhana on Pushya Nakshatra, it is reasonable to allow some time for the marching of troops, for the ground to be cleared, for the pitching of tents, for the divisions of the armies to be properly effected, and, most of all, for the allied princes to bring on their respective divisions to the field of battle. It appears to me that all these preliminary arrangements were gone through during the interval of the five days between Pushya and Chitra, in which Nakshatra the fighting actually began. But

* Salya Parva, XXXV. 10 and 15.

our epic says that both the parties were prepared for battle on the day when the moon had gone to the region of Magha. * The natural interpretation† of the expression is that on that day the moon was in Magha Nakshatra. In that case we have to suppose that though the armies were almost ready for war in Magha Nakshatra, the first shot, to use a modern expression, was not fired till after the lapse of three more days. The armies began their march to Kurukshetra in Pushya, were organized in effective divisions in Magha, and actually engaged in battle in Chitra. Or, it may be that 'Magha' is an error for 'Maghava.' The expression then would mean that the moon had entered the region of Indra, that is, the star Chitra presided over ‡ by Indra. If the emendation prove to be correct we have here another testimony to the correctness of our conclusion that the war began in Chitra Nakshatra.

It must be borne in mind that the epic was cast into its present form more than a thousand years after the date of the war. How many altera-

* Bhishma Parva, XVII.

† The commentator gives such a glaringly far-fetched interpretation, that we need not pause here to discuss it.

‡ Taittiriya Sambhita, IV. 4. 10. Taittiriya Brahmana, I 5. 2.

tions, additions, omissions and errors must there have been made during this vast period! There are many statements in the epic which conflict with one another, a circumstance which can be accounted for only on this historic basis.

One such conflicting statement occurs in the Gadayudha Parva. On the last day of the war Balarama returned to Kurukshetra from his pilgrimage to the banks of the Sarasvati,* whither he had gone on the eve of the war in utter disgust with this horrible fratricidal war. He said:—"Forty-two days have elapsed since I proceeded forth; I left on Pushya, I have returned in Sravana."† The epic states expressly that the Pushya Nakshatra on which Balarama went away on pilgrimage, was the one ‡ on which the Pandavas set out of Uplavya to the field of battle. It also certainly implies§ that the Sravana Nakshatra on which Balarama returned happened on the last day of the war. If these statements are to be taken as authentic, the obvious inference is that the war, which began with the marching of armies to

* The bed of this river is still visible near Kurukshetra and Thanesar. Dutt's Ancient India, I. 62.

† Salya Parva, XXXIV. 6.

‡ Salya Parva, XXXV. 10—15. Udyoga Parva, CLVII 16—35.

§ Salya Parva, LIV. 32.

Kurukshetra on Pushya, came to an end in Sravana forty-two days later. This conflicts directly with the natural inferences we have drawn from the other statements, namely, that the winter solstice occurred on Magha Sukla Panchami fifty days after the close of the war, that the war lasted for eighteen consecutive days, that the Amavasya which occurred on the fifth day of the war took place in Jyeshtha Nakshatra, and that Sri Krishna left for Hastinapura on his errand of peace on Revati Nakshatra of Kartika month and returned to Upaplavya on the next following Pushya. To avoid such a contingency two explanations of this manifestly corrupt text are possible. We have either to suppose that the statements about Balarama's departure on the eve of the war and about his return on the last day thereof are spurious as being opposed to the united testimony of other texts, or that the verse under discussion requires a little emendation. In the former case the inference to be drawn from the sloka is that Balarama left for the Sarasvati in Pushya Nakshatra twenty-seven days before the march of troops on the next Pushya Nakshatra to the battle-field and that he returned to Kurukshetra in Sravana some days before the close of the war. If, however, the sloka is incorrect, we may best correct it by changing

‘forty-two’ into ‘twenty-four’. If Balarama had left on pilgrimage in Pushya and returned on the last day of the war, that being the twenty-fourth from the day of his departure, the last day of the war would happen in Rohini, a result which is identical with the one we have already deduced from other texts. In that case the sloka, which now runs,

“चत्वारिंशदहान्यद्य द्वे च मे निःसृतस्य वै ।

पुध्येण संप्रयातोस्मि श्रवणे (श्रोण्यां) पुनरागतः ॥”

might then read :—

चतुर्विंशदहान्यद्य चासन्मे निःसृतस्य वै ।

पुध्येण संप्रयातोस्मि रोहिण्यां पुनरागतः ॥

There is one other conflicting verse which we shall briefly discuss. On the fourteenth night of the war there was a tremendous battle between the contending parties. It is hinted in the epic * that the moon rose up on that night after three-fourths part of it had expired. This is certainly a mistake; for the new-moon having taken place on the fifth day of the war, the moon should have disappeared below the western horizon about an hour and a half before three-fourths of the night were over. On the evening of the fourteenth day of the war, Arjuna's vow to kill

*Droṇa Parva, CLXXXV. 28 and 46-56; ap. CLXXXVII. 1.

Jayadratha having been fulfilled, the Kurus, burning with revengeful thoughts, continued the strife far into the night. The epic would have us believe that during the first half of the night a tremendous battle raged in total darkness resulting in the death of Ghatotkacha, that both the armies thereafter lay down to sleep for some time, and that on the rise of the moon at about three o'clock in the morning, both the sides recommenced their fighting. It is more probable that the war continued for as long as the moon was shining and that the armies rested when the moon had set. The poet was perhaps led to make this mistake by his anxiety to render the night sufficiently horrible for Rakshasa heroes to fight with their powers of illusion. For, it must be remembered that the Rakshasa Ghatotkacha on the side of the Pandavas and the Rakshasa Alayudha on the Kaurava side are represented as having made the night hideous by their powerful uncanny powers, which could be used effectively only in total darkness.

But, barring these two conflicting statements which too may be explained away, all other texts serve, as we have seen, to support our conclusion. We are told that the winter solstice happened on Magha Sukla Panchami, that

the tenth day battle happened fifty-eight days before it, that Bhishma, who died on Magha Sukla Ekadasi, gave up the ghost fifty-six days after the close of the war, that a period of fifty days intervened between the end of the war and the winter solstice, that the war lasted for eighteen consecutive days, that the Amavasya, which occurred soon after the commencement of the war, happened in Jyeshtha Nakshatra, that the armies began their departure to the field of battle in Pushya Nakshatra, and that Sri Krishna had proceeded to Hastinapura on his mission of mediation on the preceding Revati Nakshatra in the month of Kartika. All these point but to one conclusion, namely, that the war, which lasted for eighteen consecutive days, concluded on the fifty-first night before the winter solstice.

At present the winter solstice falls on the 21st of December. The Gregorian system, which is the basis of the calendars of all Europe, except Russia, Greece and Turkey, "involves an error of less than a day in 3521 years".* As the war took place in 1104 B.C., or 3004 years ago or 2776 years before the calendar was last corrected by Pope Gregory XIII, we may be

* B. J. Hopkins's Astronomy, p. 68.

certain that the winter solstice which occurred on the fifty-first day after the close of the war, would have happened, as now, on the 21st of December (New Style). We may therefore conclude that the War commenced on the 14th of October, and was brought to a close on the night of the 31st of October, 1194 B.C. Whether or not this precise date, based as it is on data furnished by the Mahabharata alone, proves to be acceptable to the critical eye of a historian, we may at least be sure that the War took place in the latter part of the year 1194 B. C.

CHAPTER III.

THE FOUR YUGAS

WE have stated in the preceding chapters that the Kaliyuga commenced at the winter solstice occurring in the latter part of the year 1177 B. C., and that it was originally a period of one thousand years. It is apparent that these propositions are at conflict with the orthodox opinion which makes the Yuga begin in 3102 B. C. and last for 432,000 years. How has this popular belief come about? Is it possible to find a rational explanation for this variance? We shall endeavour to discuss these questions in the course of this chapter and the next; and if we succeed in finding satisfactory solutions therefor, we may then be able to understand a little better the Chronology of Ancient India.

The Vishnu Purana (I. 3.) enumerates the following divisions of time:—“Thirty Muhurtas

make a day-and-night of human beings and a like number of day-and-nights makes a month of two Pakshas (fortnights). Six months make an Ayana (the period between the solstices), and two Ayanas constitute the year. The southern Ayana (the period between the summer and winter solstices) is a night, and the northern Ayana (the period between the winter and summer solstices) is a day, of the Gods. Twelve thousand divine years, of 360 such day-and-nights each, constitute the four yugas, Krita, Treta and the like. Know the manner of their distribution: the Kritayuga comprises 4,000 years; the Tretayuga, 3,000 years; the Dwaparayuga, 2,000 years; and the Kaliyuga, 1,000 years. Thus those that know the past have declared. The period that precedes a yuga is called 'Sandhya,' which comprises as many hundred years as there are thousands in the yuga; and the period which comes after a yuga is called 'Sandhyamsa,' which lasts for a like period. The intervals between these Sandhyas and Sandhyamsas are known as the yugas called Krita, Treta, and the like. The Krita, Treta, Dwapara and Kali go to constitute the Chaturyuga, a thousand of which make a day of Brahma. There are fourteen Manus in a day of Brahma."

The Surya Siddhanta (ch. I) also speaks of the same divisions of time. According to it,

Mahabharata, both of which give a different account of the Yugas, are decidedly of an earlier date. Sir Wilham Jones placed Manu between 1250 and 500 B. C.; and Schlegel was content with 1,000 B. C. Professor Duncker gives 600 B. C., and Wilson and Monier Williams, 500 B. C. Johaentgen gave 500-350 B.C., and the late Justice Mr. Telang, about 200 B. C. Dr. Burnell fixes 500—200 B. C. for the older prose code, out of which, according to him, the present metrical redaction arose between 100 and 500 A.D. Dr. Buhler, the learned translator of Manu in the Sacred Books of the East Series, states that this "estimate of the age of the Bhrigu Samhita (our metrical code), according to which it certainly existed in the second century A.D., and seems to have been composed between that date and the second century B.C., agrees very closely with the views of Professor Cowell and Mr. Talboys Wheeler."* As regards the Mahabharata, we have already given the various dates assigned to it by different scholars, all more or less pointing to the beginning of the Christian era for the work in its present shape. The opinion of Professor Macdonell on this point seems to me

* Introduction, p. CXVII.

to be very fair. He observes that the epic itself relates (l. 81.) that originally it consisted of 8,800 slokas only and then increased to 20,000 and 100,000 verses successively. He believes that the epic existed in an earlier form consisting of about 8,800 verses as early as the fifth century B.C., and that there was an extension 'after 300 B.C. and by the beginning of our era,' when the Yavanas, Sakas and Pahlavas are mentioned in it for the first time. He continues :— * “There is an inscription in a land grant dating from 462 A.D. or at the latest 532 A.D., which proves incontrovertibly that the epic about 500 A.D. was practically of exactly the same length (100,000 slokas) as it is stated to have in the survey of contents given in Book I., and as it actually has now.* * It is only reasonable to suppose that it had acquired this character at least a century earlier, or by about 350 A.D.* * We are already justified in considering it likely that the great epic had become a didactic compendium before the beginning of our era.”

In his monumental Lexicon, Roth states that “according to the earlier conception stated in Manu and Mahabharata, the four yugas, Krita, Treta, Daapara and Kali, with their mornings and even-

Krita and other yugas last for 4,800, 3,600, 2,400 and 1,200 years respectively.

The passage serves also to show to us that it belonged to what Professor Macdonell calls the 'the second stage' in the history of the composition of the epic. We have already seen that a few Yavana or Græco-Bactrian kings were ruling over the northern parts of India from about 326 B. C., the date of Alexander's conquest of India, to about 165 B. C., and that they again invaded India at the time of Menander (144 B.C.) The Sakas first came into prominence about the time of Garga (165 B. C.); and the Yuehti tribe overran Bactria in about 126 B. C. and very shortly after invaded Northern India.* History does not know of any Yavana or Saka king ruling over Hindustan anterior to the dates given above. It obviously follows that the passage in question dates from a time not earlier than the first century before Christ.

The Manusmṛiti, which offers many striking similarities† to the Mahābhārata, states (I. 69-71.) that the Krita, Treta, Dwapara and Kali yugas with their respective twilight periods consist

* Duff's Chronology of India, pp. 15-19.

† Dubler's Manu, Introduction, pp. LXXXV and LXXXVI; Telang's Introduction to Bhagavat Gīta, in Vol. VIII of Sacred Books of the East Series.

It is stated in the *Taittiriya Brahmana* (III. 9. 22. 1.) that "one day of the Devas is a *Samvatsara* (human year)." The *Suryasiddhanta*, the *Vishnu Purana* and a number of other works refer to the same idea. The *Vishnu* tells us that "the period between the summer and winter solstices is a night, and that between the winter and summer solstices, a day of the Gods." This idea seems to have been derived from the old geographical notions current in Ancient India and recorded in the *Mahabharata* * and the *Puranas*. According to them, the mountain *Meru* was located in the middle of the Universe, round which the sun, the moon, the planets and the stars were said to revolve. The *Dhruva Nakshatra* or the Pole Star was said to shine just above its summit. "The world is here represented as consisting of seven concentric islands separated by different oceans. The central island, with Mount *Meru* in the middle, is *Jumbudwipa* of which *Bharatavarsha*," † or India, is the main division. The *Meru* was so lofty that the *Himalayas* were said to bear no comparison to it. What then was this gigantic *Meru*? The description of it leads one to conclude that it was no other than the northern hemisphere of our

* *Bhishma Parva*, VI—IX.

† *Macdonell's Sanskrit Literature*, p. 300.

It certainly resembles the form of a mountain pointing to the North Pole and round which the celestial bodies undoubtedly appear to move. Our astronomers have made the point clear by telling us that "the equatorial line *Bhuchakra* divides the earth into *Sumeru* and *Kumeru*, the northern, and the southern, hemisphere. The northern hemisphere ends at 'Uttara *Dhruva*' or the North Pole, and the southern at 'Dakshina *Dhruva*' or the South Pole." At the North Pole is the top of the *Meru* where the *Devas* are supposed to live, and at the South Pole are said to reside *Asuras*, *Pitris*, and the God of Death.

It is very possible that the idea that the golden summit of *Meru* is the residence of the *Devas* (Shining Ones) originated in a faint recollection of the earliest history of the Aryan races, who must have, long before their dispersal towards the South and the West, resided somewhere in the northern latitudes near the Arctic regions, where the *Aurora Borealis*, which stirred Dr. Nansen's imagination so deeply in his expedition to the 'Farthest North,' plays such fantastic tricks. This wonderful display of the Northern Light, for a long time the theme of scientific discussion, seems to have been easily disposed of by the primitive Aryan patriarchs as the golden abode of the '*Deva*,' a word coming from the root

'div,' to shine, and having its counterparts in the Latin '*Deus*,' and in the English 'Divinity.' Even now if an unsophisticated person, uninfluenced by the scientific scepticism of the age, were suddenly to be transported to those dismal regions, would not his heart throb at the magnificent sight of that wonderful phenomenon? Nay, more, he would attribute that every recurring, ever vanishing, spectacle to the finger of God, to some divine agency. How much more must the simple forefathers of the Vedic Bards, who delighted in personifying and worshipping every element or object in Nature, have felt the 'divinity' of that remarkable scene?

Those frigid regions have only one long day and one equally long night during the course of a year.* As long as the sun is above the Equator, the North Pole enjoys its day and the South Pole passes through its night. If the sun appears to go south of the Equator, the North Pole is dark and the South Pole is bright. For the hypothetical Devas inhabiting the summit of Meru, the day lasts for as long as the sun is in the north of the Equator, or for six months; and the night lasts for the other six months of a year. In other words, the period between the vernal and autumn-

* Ball's Elements of Astronomy, pp. 139-149.

al equinoxes represents the day, and that between the latter and the former, the night, of those who may be said to reside, like the Deras, near the North Pole.

But we are told by the Vishnu Purana and the Surya Siddhanta that the Uttarayana, or the period between the winter and summer solstices, is a day, and that the Dakshinayana, or the interval between the summer and winter solstices, a night of the Gods. As Mr. Tilak points out, *Uttarayana and Dakshinayana, or as they seem anciently to have been known, the Devayana and Pitriyana, originally denoted the periods between the equinoxes and not those between the solstices. As the year originally commenced with the Devayana which was its first half, it is clear that when the beginning of the year was changed, shortly before the Mahabharata War, from the time of the vernal equinox to that of the winter solstice, the Devayana or Uttarayana also commenced with the new beginning of the year at the winter solstice. Thus the Uttarayana, instead of denoting the period when the sun was in the north, came subsequently to signify the period when the sun was proceeding to the north.

We therefore find that the belief that one hu-

* Orion, pp. 23-27.

man year constitutes a day-and-night of the Devas can be traced to the old geographical notions prevalent in India. As, according to old Hindu ideas,* the year consisted of 360 days only, a Deva year would last for 360 of their day-and-nights, or 360 human years. While the Manusmriti and the Mahabharata give 1200 ordinary *human* years for the Kaliyuga, the later Puranas and Siddhantas assign to it 1200 *divine* years, or 432,000 ordinary human years.

But even this period of 1200 ordinary years which were allotted to the Kaliyuga at about the first century B. C. consisted of 1000 years for the yuga proper and 200 years for its Sandhya (twilight) periods. On its face it is apparent that the Sandhya period did not form part of the original duration of the yuga itself. The Mahabharata says, 'The next yuga, called Kali, is said to comprise one thousand years, and its dawn as well as its eve, is said to comprise one hundred years.' It may be properly asked why this distinction is made between the yuga and its Sandhyas, when practically there is none at all between them. It might as well have been stated all at once that the Kali lasted for 1200 years. The Vishnu Purana also is to the same effect.

* Rig Veda Samhita, I. 164. 11 and 48

“The Kritayuga comprises 4,000 years; the Treta, 3,000; the Dwapara, 2,000; and the Kali, 1,000. *Thus those that know the past have declared.* The period that precedes a yuga is called Sandhya * * * and the period which comes after a yuga is called Sandhyamśa, which lasts for a like period. *The intervals between these Sandhyas and Sandhyamśas are known as the yugas called Krita, Treta and the like.*” If then the intervals only between the Sandhyas were known as the ‘Yugas,’ it obviously follows that the Kali, Dwapara, Treta and Krita ‘Yugas’ were thought by those ‘that knew the past’ to have lasted for 1,000 2,000, 3,000 and 4,000 years respectively, and that the Sandhya periods did not form part of the duration of the ‘Yugas.’ If the Kaliyuga had indeed been from the very first considered to be a period of 1200 years, no such unnecessary distinction as that drawn between the Yugas and their Sandhyas would probably have been made. As therefore the Sandhya periods were later additions, it is also apparent that those who brought them first into existence would not all at once state, for instance, that the Kali would last for 1200 years, for that would imply a want of due respect for the old belief that the Kali was a period of 1000 years,

but would rather suggest that the Kaliyuga lasted for 1000 years and its Sandhyas for another period of 200 years.

We have also a *vaiddik* authority for the contention that the Sandhya periods were not originally in existence. It may be observed here that all genuine Vedic works are much earlier in date than either the Epic or the Dharmaśāstra. In the Atharva Veda Samhita (VIII. 2. 21.), it is stated: शतं तेऽयुतं द्वायनान्दे युगे त्रीणि चत्वारि कृमः ॥ i. e., "We allot to thee a hundred, (nay) ten thousand years, two, three, (or even) four yugas." Muir thinks that "we may with probability assume that the periods here mentioned proceed in the ascending scale of duration," and that "two yugas, and perhaps even one yuga, must be supposed to exceed ten thousand years." * It is very true that we have here an ascending scale of duration and that two yugas are decidedly meant to exceed 10,000 years. But with the greatest respect for so high and learned an authority, I venture to submit that one yuga is not intended here to exceed 10,000 years; for in that case the passage would run thus: "We allot to thee a hundred, (nay) ten thousand years, one, two,

* Original Sanskrit Texts, I. 46.

three, (or even) four Yugas." But as it is, the word 'one' is left out, purposely, as I venture to believe. In my opinion, one yuga was meant to equal 10,000 years, neither less nor more, for the following reason. The yugas are called distinctly by their names, Krita, Treta, Dwapara and Kali, in the Aitareya Brahmana (VII. 15.), a work of nearly the same date as that of the Atharva Samhita; and whereas the Gopatha Brahmana (I. 28) refers to the Dwapara age, the Mundaka Upanishad (I. 2. 1) mentions the Treta yuga in a distinct manner. The word 'yuga' in the passage quoted above from the Atharva Veda must therefore denote one of these four yugas, or a Chaturyuga comprising all of them. But it cannot signify the Kaliyuga, because the scale being in an ascending order of duration, 'two yugas' must exceed ten thousand years, whereas two Kaliyugas last, according to the evidence of the Smriti and the Epic, only for 2,400 years at the utmost. Neither does the word 'Yuga' refer to the Dwapara, Treta or Krita yugas, for two such yugas cannot exceed 4,800, 7,200, or 9,600 years respectively at the utmost. Therefore the word 'Yuga' should denote the duration of a Chaturyuga, which is a period of 10,000 or 12,000 years according as we exclude or

include the Sandhya periods. But the 'Yuga' does not constitute the larger period, for, as we have already seen, in that case the word 'one' would have been inserted before 'two.' Thus, if we grant, as we must, that the scale is in an ascending order of duration, we arrive at the probable result that the 'Yuga' means a Chaturyuga lasting for 10,000 years. As a matter of fact, we have already quoted a passage from the Manusmriti wherein a Chaturyuga is called 'a yuga of the Devas,' and another from the Mahabharata in which it is called by the simple name of 'yuga.' It is therefore extremely probable that the word 'Yuga' in the passage quoted above from the Atharva Samhita expresses the same idea as the very same word does in the passages extracted above from the Dharma Sastra and the Epic, i.e., a Chaturyuga. As the passage in the Atharva Veda is addressed to a deity, His 'Yuga' would be a 'Yuga of the Devas' consisting of 10,000 years. Just as among mortals, there are four yugas, the first or Kali lasting for 1000 years, the next previous or Dwapara for twice that period, the Treta and Krita for thrice, and four times that duration respectively, so also, as being a Deva, he was allotted first a yuga of 10,000 years, then successively, two, three and four such

yugas. This appears to me to be the meaning intended. If therefore a Chaturyuga lasted for 10,000 years, the Kali, Dwapara, Treta and Krita should have lasted only for 1,000, 2,000, 3,000 and 4,000 years respectively.

We find therefore that at the time of the compilation of the Atharva Veda Samhita, the Kaliyuga was supposed to last for 1000 years, that at the time of the composition of our Metrical Manusmṛiti and of the second redaction of the Mahabharata in 20,000 slokas, the Kaliyuga with its Sandhya and Sandhyamsa was thought to be a period of 1200 years, and that since the date of the Vishnu Purana and Surya Siddhanta, as we now find them, the Kali has been considered to last for 1200×360 , or 432,000 years. What then led to the changes successively made in the durations of the yugas?

We have already proved that the Kaliyuga and the Kollam Andu commenced in 1177—76 B. C. If the Kali was originally a period of 1000 years, we find that the Kali corresponded exactly to the first Kollam cycle. Both came to an end in 177—76 B. C. It has been seen that Gargacharya, who was then living, said with reference to the Bactrian invaders who left India in about 165 B. C., that they retired 'at the end of the yuga'.

Consequently the yuga which came to an end at about 165 B. C., was certainly the Kali of one thousand years, or the first cycle of what has since come to be known as the Kollam Andu.

From this time forward the Kollam Andu has a history of its own. The forefathers of some at least of the modern Namburis seem to have separated from the main body of the Aryan people not long after this time. They seem to have settled first in the Andhra country and, after the lapse of a few more centuries, to have permanently fixed their residence in the fertile tracts of rainy Malabar. Says Mr. V. Nagam Aiya in his report on the Census of Travancore (I. p. 654):—
“The bulk of them (the Brahman colonists of Malabar) came of course from the region between the Krishna and the Godavari rivers,” which, having no natural advantages, has “a poor soil, inhospitable climate, and a poverty-stricken population, constantly devastated by long droughts and severe famines. This land naturally, therefore, supplied Parasurama with the largest number of his colonists. The Namburis themselves believe that most of them came from the land lying between the two great rivers, the Krishna and the Godavari. Tradition points to the same theory, and the ancient books on Kerala

confirm the popular belief, the accuracy of which may be verified by a careful observer. There are so many points of similarity, large and small, between the Namburis and their prototype residents of the Telugu country from which they are said to have come." Mr. Nagam Aiyar then proceeds to enumerate fourteen such 'points of similarity,' the cumulative effect of which is certainly favourable to his conclusion.

It need not be supposed that the Aryans had no knowledge of India south of the Narmada in the second century B. C., for we find that even such an early work as the Aitareya Brabmana (VII-18) speaks of "certain degraded barbarous tribes, among them the Andhras." Baudhayana (6th century B. C.) mentions Kalunga, and Katyayana (4th century B. C.) speaks of Chola and Pandya. Asoka (3rd century B. C.) mentions the Cholas, Pandyas, Kalingas, and 'Keralaputra' in his inscriptions; and Apastamba himself (between the fifth and the third century B. C.) is said by Dr. Buhler to have belonged to the Andhra country. Megasthenes (300 B. C.) refers to the Kalingas, Andhras, and Pandae or Amazon country. Ptolemy (126—161 A. D.) makes one Chera King 'Kerebothros' rule over 'Karoura' (Karur). Dr. Buhler is therefore led to the con-

clusion that the Aryan conquest of South India took place 'long before the fourth century B.C.'*

It is thus apparent that when the little band of the forefathers of some at least of the modern Namburis saw the end of the yuga of 1000 years which commenced soon after the Mahabharata War, they followed it up by another cycle lasting for a like period, led no doubt thereto by the fact, which they seem to have faintly remembered, that two such yugas of one thousand years each had expired about the time of the Mahabharata War. By the time that this second cycle came to an end in 825 A. D., they had for some time been settled in Malabar. The third cycle, which began in 825 A. D., came therefore to be known as the Kollam Era, after the name of a famous town in Malabar.

The Kaliyuga had a quite different transformation among the main body of the Aryan people of India. It came to a close, as we have seen, in 177 B. C. But the old belief was that the Kritayuga of 4,000 years followed the Kaliyuga of 1,000 years. It must be remembered that the Krita has always been thought to be an age of transcendent purity, when, according to the Mahabharata (Vana Parva, CXLIX.), "Every

* Sacred Books of the East, Vol. II., Introduction.

one had religious perfection. ** There was then neither disease, nor the decay of the senses. There was no malice, no pride, no hypocrisy, no discord, no ill-will, no cunningness, no fear, no misery, no envy, no covetousness. ** All acts had reference to the attainment of *Brahma*." The epic continues :—"In the Treta age, virtue decreased by a quarter and the God *Narayana* (who, in the Krita age, was white) assumed a red colour. Men practised truth and devoted themselves to religious rites. Sacrifices were introduced. * * Men then began to aim at attaining objects, which they obtained by performing religious acts and making gifts. ** In the Dwapara, virtue decreased by a half. *Vishnu* assumed a yellow colour and the *Vedas* became divided into four parts. * * Mostly induced by passion, men engaged in asceticism and gift. ** As the intellect deteriorated, few were devoted to truth. * * In the Kalyuga, only one quarter of virtue remains. When this age appears, *Kesava* assumes a black colour. The *Vedas*, the Institutes, virtue, sacrifices and religious observances, all fall into disuse. Then excessive rainfall, draught, rats, locusts, * * diseases, lassitude, anger, deformities, natural calamities, anguish and fear of famine take possession of the world. * * The religious acts per-

formed at the waning of this yuga produce contrary results."

As the Kali of 1000 years came to an end in 177 B. C., the golden age of Krita ought then to have come into existence. But the glorious state of things predicted for the Krita was so opposed to the state of morals and of society in 177 B. C., that learned divines in India must have keenly felt the difference between the sinful nature of their times and the ideal state of things which ought to prevail in the Krita age. Whereas according to the old beliefs recorded in the Mahabharata (Vana Parva, CXI.) the barbarian Mlechhas, the pest of India in the Kali age, must have ceased to exist in the Kritayuga, Buddhism, foreign invasions and barbarian influences were rampant in India during the second century B. C. So the questions to be solved at that time were whether the Krita really signified a golden age of religion and of virtue and whether the Kritayuga had actually set in. Orthodox India could never have brought itself to propose the first question as it would reveal a woeful lack of reverence for the scriptures of olden times. The second question, which also was not quite a safe one, was however not so dangerous. They therefore solved their difficulties in a manner characteristic of every conservative people who have

to reconcile the dicta of the past with the actualities of the present. They supposed that the effects of the Kritayuga could not all at once change the influences of a thousand years of the Kali age. As in the physical world the darkness of the night is first removed by the mild influence of the dawn before the sun shows himself in all his glory, just as the morning twilight heralds the day and the evening twilight precedes the night, so in the moral world, there ought to be a transitional period when the effects of both the Kali and Krita yugas would merge into one another. This necessary interval of transition was called the Sandhya (junction) period and as the Kali lasted for 1000 years, the 'twilight' period^s preceding and succeeding it were each made to extend for an additional tenth part of the yuga, a proportion which seems to have been borrowed from the daily phenomena of morning and evening twilights. Krishna Pandita, the author of a Bhashya on Sandhyavandana, quotes with approval the following two slokas from some unnamed Smṛiti:—

अहोरात्रस्य यत्संधिस्सूर्यनक्षत्रवर्जितः ।
 तत्तत्सन्ध्यामुपासीत सायंप्रातस्समाहितः ॥
 उदयात्प्राक्तनी संध्या धटिकात्रयमुच्यते ।
 सायं संध्या त्रिघटिका अस्तादुपरिभास्वतः ॥

So also in the Abhika Kanda of Smritimuktaphala, Vaidyanatha Dikshita says:—

यत्तु प्रातस्सन्ध्या त्रिनाडीस्यात् साय सन्ध्या तथात्रिधेति
स्मरणं ॥

These slokas tell us that the morning and evening Sandhya prayers are to be performed at the Sandhi (junction) of the day and night, when neither the sun nor the stars are visible, that the morning Sandhi extends to three Ghatikas (3×24 minutes) before sunrise and that the evening Sandhi lasts for a like period after sunset. As the period between sunrise and sunset in India is about 12 hours on an average, and as each of the two Sandhyakalas lasts for threeghatikas, or for 1 hour and 12 minutes, according to these recognised authorities, the Sandhyakala is exactly one-tenth of the duration of a day of 12 hours. These Sandhya prayers date from a time not later than that of the Taittiriya Aranyaka, in which they are elaborated. It is therefore probable that this determination of the time for their performance may have been made at a pretty early period.

It is interesting to note that exactly the same period is given by modern astronomers for the twilights. Says Sir Robert Ball in his *Elements of Astronomy* (pp. 154-5):— “The dusk is thus usually visible until the centre of the sun has

been carried by the diurnal motion to a perpendicular distance of 18° below the horizon. Similarly the earliest glimpses of dawn may be caught when the sun, in his approach to the horizon, has attained a distance of only 18° therefrom." In places, like India, which are located near the equator, "before sunrise the sun will ascend perpendicularly to the horizon, and after sunset it will descend perpendicularly below it. The twilight will therefore continue in this special case during the time when the sun moves through an arc of 18° on the celestial sphere, in virtue of the apparent diurnal motion. As the diurnal motion completes its revolution in twenty-four hours, a point on the equator which moves through 360° in one revolution must move through 15° in one hour. To move through an arc of 18° , a time of 1 hour 12 m. will therefore be required. Hence it appears that under the circumstances we have described the twilight at dusk and at dawn will last for a period of 1 hour, 12m."

This determination of the duration of the twilights appears to have been made use of in the fixing of the periods for the Sandhyakalas of the Yugas. As a day of 12 hours has two twilight periods, each lasting for 1h. 12m., i.e., for one-tenth of the duration of a day, similarly the Kaliyuga of 1000

years came to have two Sandhyas, each lasting for 100 years. So also the Krita, Treta and Dwapara yugas were allotted proportionate Sandhya periods, namely, 800, 600 and 400 years respectively. It is not to be inferred that these Sandhya periods were added to the yugas just at the close of the Kaliyuga in 177 B. C. It would be unphilosophical to suppose that this contrivance was sought for and discovered immediately after the completion of the Kali. It would have taken some time for people to be thoroughly satisfied that the Kritayuga had not actually set in. Until it became evident that the effects of the old Kaliyuga still lingered on, they would not have been so bold as to innovate on old ideas. Moreover, Garga speaks of certain kings as ruling in Oudh after the destruction of the Yavanas 'at the end of the yuga,' a statement which necessarily leads to the inferences that Garga wrote his historical portion of his Suddhanta sometime after 'the end of the yuga' and that he still believed that the yuga lasted only for 1000 years. It therefore stands to reason that these Sandhya additions were effected a few decades later, say, in the first century before Christ. This date perfectly accords with that we have already given for the Manusmriti and the Mahabharata,

both of which, dating from the first century B. C., refer to the twilight periods for the first time.

The description of the effects of the Kaliyuga, as contained in the 14th and 19th chapters of the Vana Parva of the Mahabharata is very graphic and it would be needless to reproduce it here. These chapters proclaim many times over that religion and virtue will disappear and that the barbarian Sakas, Yavanas, Balhikas and many others will derivate Bharatavarsha 'at the end of the Kaliyuga.' It may be remembered that the Sakas, Yavanas and a few others were actually disturbing the peace of India in the first and the second century B. C. We may shrewdly guess from such statements that the end of Kali was supposed not to be far off. The Epic also tells us that the Kaliyuga would end "when the sun, the moon and Jupiter enter the constellation of Pushya (the nebulous Praesepe), at which time the clouds would incessantly shower rains, and stars and planets would again be propitious.** Abundance, prosperity, wealth and peace would be everywhere. Impelled by Time, a Brahmana named Kalki Vishungasha would then be born. He would possess great energy, intelligence, and prowess. He would be born at a village called Sambhala, in a blessed Brahman family. * * He would exterminate all the low and

despicable Mlechchas, wherever they might be found," and the Krita yuga would then commence. The conjunction of these three heavenly bodies in the same celestial region generally takes place, as we have seen in the last chapter, once in every 60 years. If the compiler of the Mahabharata had a long period in mind to elapse before the end of Kali, he would not have chosen to denote the end of it by a conjunction which generally takes place once in every 60 years. It is therefore probable that he fixed the end of the Kali yuga at about the time of the next such conjunction. Moreover the prophecy regarding the birth of Kalki Vishungasha at Sambhala village seems to refer to some local belief current at the time. If the end of the Kali were to take place after the lapse of a long period, the name of the village also in which the incarnation was to take place would not perhaps have been given. All these circumstances tend to show that the Kali yuga was to come to a close very shortly after the first century B. C., the date of this portion of the Mahabharata.

The Kali yuga of 1200 years actually came to an end in 24 A. D. It was eagerly hoped that better times would dawn in Bharata Varsha at least after that critical epoch. If we have to

guage aright the intensity of anxiety felt at that time, we have only to call back the slighter experiences we ourselves underwent barely three years ago. The 'five-thousandth year Pralaya' was on the lip of every Hindu and a mysterious significance was attached to it. We were also amused to find the ill-concealed solicitude of our Government to understand our feelings and beliefs in that anxious period. So also the approach of the 'millennium' was regarded with awe and anxiety during the times of Otto the Great and his imperial successor, the noble-minded Otto III.

But a better age did not dawn in 24 A. D. and the eager hopes of the people were not destined to be fulfilled. Far from there having been any sign of the Krita age, Buddhism was at its height and Brahmanism at its lowest ebb in India. Scepticism had come to prevail over orthodoxy. The greatest king of the time was Kanishka, a barbarian professing an atheistic creed. The fourth great council of Buddhism was then formulating its dogmas in the land of Vedic ritualism. Many Mleccha kings were despoiling the north and the west of India. Instead of the Vedic religion coming back in its pristine glory, it was losing its most influential adherents through the proselytizing zeal of Buddha's creed. Could such a time,

the Hindus seem to have asked themselves, be the beginning of the golden age? Were then the prophecies of the ancient sages to be thus falsified? These considerations seem to have sorely perplexed the minds of the orthodox Hindus of the first one or two centuries of the Christian era.

Then arose what we may call the Renaissance period in the history of India, a period of great activity in many branches of literature, arts, sciences and religion. In a long note added to the first edition of *'India, What can it teach us,'* Max Muller "tried to show that that period began about 400 A.D., and that the great break between the ancient Vedic and Buddhistic literature and the artificial Kavya literature was due to the inroads of the Scythians. He had fixed that literary interregnum as between the first century B. C. to at least the third century A. D." Professor Buhler controverted this opinion and showed that there were clear traces of the Kavya style in the inscriptions of the second century A. D. Max Muller replied by stating that "amongst the literary works (of the Kavya style) which we actually possessed, none could be safely referred to a date before about 300 A.D." Though scholars may not yet agree with Max Muller to the full extent of his opinions, yet they will concede, I have

no doubt, that such a great impetus was given at that time to the cause of learning and literature, that it might well have merited the name of the Renaissance period. Hinduism had just then begun to revive* and to don its modern garments. The force of Buddhistic, Jain and Atheistic systems having weakened the strongholds of orthodox beliefs, this reactionary age set about to place the old dogmas and observances on a rationalistic basis. The coat armour of ancient Hinduism, battered as it appeared to be by the repeated onslaughts of opposing creeds, was then slowly patched up and tried to be rendered nearly impervious to the darts of reason or sentiment. An age of construction, of readjustment and re-arrangement of ancient beliefs, had now succeeded a destructive age of scepticism and of barbarian invasions. The pity of it was that reaction was carried a little too far to the verge of superstition, and the Paranas began to show not only a sectarian tendency, but also a taste for the marvellous and the extraordinary.

At this remarkable period in Indian History, the glaring absurdity of supposing the Kali yuga to have already come to an end must have been keenly felt. If the Kali of 1200 years had ended in 24 A.D., the

* Dr. Bhandarkar's article on the Social History of India in Chintamani's *Indian Social Reform*, p. 2.

Krita must have set in, which was not the case. As necessity has generally been the mother of invention, there arose an explanation, as ingenious as it was plausible, that the 1200 years allotted for the Kali were so many *divine* years, or 432,000 ordinary human years. Such a subtle explanation obviated the danger of the Kaliyuga coming again to a speedy end and thereby giving rise to fresh difficulties. It agreed well with the state of society at that time, which showed no signs of reverting to, but was receding away from, the ancient orthodox ideal. It served to preserve the authority of the older writings like the Mahabharata and the Manusmriti, both of which assigned 1200 years to the Kali age; and applied very well to existing circumstances. Moreover, the age of exaggerations had already commenced and the Puranas were beginning to distort facts into fabulous legends. Under such circumstances the extraordinary duration of the yugas was quite in keeping with the times.

It remains now for us to discuss the significance and the origin of the names of these different yugas. The word *yuga* comes from the root *yuj*, to join, and possibly it originally meant 'a collection of years.' Mr. Rangacharya, however, states that it "is both in meaning and etymology allied to the astronomical term *conjunction*." It

seems to me that originally the word *yuga* could have had nothing to do with the astronomical phenomenon of 'conjunction,' for the obvious reason that the word is used in some of the earlier hymns of the Rig Veda, to the time of whose composition it may perhaps be preposterous to attribute such knowledge. It is more consistent with what we know of the state of society in those ancient times, that a *yuga*, 'age,' was then only a large division of time without reference to the motions of the celestial bodies. According to Muir, it frequently occurs in the Rig Veda "in the sense of age, generation or tribe." This scholar collects in his profound *Original Sanskrit Texts* (I. 45.) almost all the passages of the Rig Veda, wherein the word occurs. This ancient work speaks of *Yuge Yuge* 'in every age,' *Uttara Yugani* 'future ages,' *Uttara Yuge* 'in a later age,' *Purvani Yugani* 'former ages,' *Yuga Jurna* 'former age,' *Manushya Yuga*, *Manusha Yuga* and *Jananam Yuga* all meaning 'human yuga,' *Devanam purvye Yuge* 'in a former yuga of the Devas,' *Devanam Yuge prathamam* 'in the first yuga of the Devas,' *Devebhyaḥ thriyugam pura* 'before three yugas from (or of) the Devas,' *Nahusha Yuga* 'the age of Nahusha,' and *Dasame Yuge* 'in the tenth yuga.' We learn from these extracts that, in the days of the Rig Veda, the

word *Yuga* denoted a period of time which seemed to vary according as it was used in connection with human beings or the Devas.

We have already seen that the Atharva Veda Samhita speaks of the yugas in such a manner as to lead us to infer therefrom that at the time of its compilation a *Yuga* (*chaturyuga*) comprised ten thousand years. But for the first time in the literature of India, the words *Krita*, *Treta*, *Dwapara* and *Kali* occur in three nearly contemporaneous Vedic works, the Aitareya and Taittiriya Brahmanas and the Vajasaneya Samhita, all of which were compiled, like the Atharva Samhita, within about a century after the Mahabharata War.

It may be generally stated that the Samhitas are older* than the Brahmanas which are chiefly commentaries on the ritualistic portions of the former. Tradition, which in this case there is no reason to doubt, ascribes the compilation of the *Thraividya*, the three Samhitas of the Rik, Saman, and Black Yajur Vedas, to the time of Krishna Dwaipayana, under whose superintendence it seems to have been effected. As he was a contemporary of the heroes of the Mahabharata War, we may be sure that they took their original shapes at that time. But the Atharva Samhita and the

*Max Muller's *Itig Veda*, Vol. IV, Preface, V—VII.

Vajasaneya Samhita of the White Yajus seem to have come into existence a little, but only a little, later. Though the 'Atharvanas' are mentioned in the 30th book of the Vajasaneya Samhita, in the 11th, 13th and 14th books of the Satapatha Brahmana, in the 7th book of the Chhandogya Upanishad and in the 2nd and 8th books of the Taittiriya Aranyaka, yet the fact that even comparatively so late a work as our Manusmriti speaks of only three Vedas and that the Taittiriya Aranyaka assigns the Atharva Veda only a secondary position by inserting '*adesa*,' i.e., the Brahmanas, between the three other Vedas and the Atharvangirasas,* shows that it had not attained the rank of a Vedic Samhita till long after the compilation of the three other Vedas. Even now in Malabar the name of "the fourth veda" is popularly applied, ludicrously enough, to the Khoran of the Mussalmans and not, as in the rest of India, to the Atharva Veda, a circumstance from which we may perhaps infer that the Namburi Brahmins originally knew, like the Manusmriti, only of three Vedas and separated from the rest of the Aryan folk before the Atharva Veda had attained the dignity of a Vedic Samhita; but this is by the way. At whatever time it might have been recognised as a

* Weber's Indian Literature, p. 149.

Veda, it is enough for our purpose to bear in mind that it is more recent than the three older Samhitas and that it is probably contemporaneous with the Vajasaneya Samhita in which it is referred to.

The Vajasaneya Samhita must have been compiled not long after the Mahabharata War, for its compiler Yagnavalkya, the reputed pupil's pupil of Krishna Dwaipayana, was a celebrated divine, who is referred to in the Satapatha Brahmana (XIII.14) in the following connection. Yagnavalkya is asked by a rival, 'Whither have the Parikshitas (the four sons of Parikshit, the grandson of one of the Pandavas) gone?' He answers 'Thither where (all) Asvamedha sacrificers go.' "Consequently," says Weber in his *Indian Literature* (p. 126), "the Parikshitas must at that time have been altogether extinct. Yet their life and end must have been still fresh in the memory of the people, and a subject of general curiosity." Weber also says (p. 125): "The time when these last four (Janamejaya Parikshita, Bhimasena, Ugrasena, and Srutasena) lived cannot be considered as very distant from that of the Kanda (13th of the Satapatha Brahmana) itself, since their sacrificial priest Indrota Daivapa Saunaka (whom the Mahabharata, xii. 5595, also specifies as such) is once mentioned in it apparently as coming forward in opposition

to Bhallaveya; while his own opinion, differing from that of the latter, is in turn rejected by Yagnavalkya." It may also be remembered that Yagnavalkya is said to have compiled his redaction of the Yajur Veda in a systematic manner as a protest against the diffuse and unmethodical Samhita of the Black Yajur Veda, where both the Mantra and Brahmana portions are jumbled together. We are therefore justified in placing the Vajasaneya Samhita and the Atharva Veda Samhita shortly after the War, say, within a century of its occurrence.

The Aitareya Brahmana also refers to Janamejaya Parikshita and is, according to Professor Macdonell, earlier than the Satapatha Brahmana, which, as we have seen, was written shortly after Janamejaya's time. Dr. Haug seems to consider the Aitareya to be one of the earliest of the Brahmanas,* whereas Professor Macdonell thinks it to be later than the Taittiriya and Panchavimsa† Brahmanas. As the Taittiriya Samhita, at all events in its original form, dates from the time of the War, the Taittiriya Brahmana, which is partly a commentary on, and partly a continuation of, the Taittiriya Samhita which it resembles so closely, must have been compiled soon after the War. Consequently it

*Aitareya Brahmana, Vol II. p. 464.

†Sanskrit Literature, p. 203.

may be concluded that the Taittiriya and Aitareya Brahmanas, like the Vajasaneya and Atharva Samhitas, date from the first century after the War, or from the eleventh century B.C.

I have dwelt at such length on the dates of these Vedic works because we are thereby enabled to ascertain the time when the four yugas are first referred to in Sanskrit literature. The names of these yugas occur for the first time in the Aitareya Brahmana (VII-15), where it is said:—"Kali is lying, Dwapara is slowly shaking up, Treta is standing, and Krita is in full motion, (hence) wander on, wander on." As Muir points out, the very same idea is expressed in the Manusmriti (IX. 301-2): "The Krita, Treta, Dwapara and Kali yugas are all modes of a king's action; for a king is called a Yuga. While asleep, he is the Kali; waking, he is the Dwapara age; intent upon action, he is the Treta; moving about, he is the Krita." A slightly different rendering of the same comparison is found in the Mahabharata (III. CXO.), where Markandeya tells Yudhishtira; "In the Krita age, everything was free from deceit and guile, avarice and covetousness. Virtue like a bull was among men with four-legs complete. In the Treta, sin took away one of its legs and virtue had then (only) three legs. In the Dwapara,

sin and virtue are mixed half and half. In the dark (Kali) age, virtue, being mixed with three parts of sin, lives by the side of men. Accordingly virtue is said to wait upon men with only a fourth part remaining." Dr. Haug explains the foregoing quotation from the *Aitareya Brahmana* in the following manner: " Sayana does not give any explanation of this important passage where the names of the yugas are mentioned for the first time. The four names are, as is well-known from other sources, names of dice used at gambling. . The meaning of this *gatha* is: There is every success to be hoped; for the unluckiest die, the Kali, is lying, two others are slowly moving and half fallen, but the luckiest, the Krita, is in full motion. The position of dice here given is indicative of a fair chance of winning the game." That Dr. Haug's interpretation is quite inapplicable is the opinion of Drs. Muir, Weber, Roth, Strater, Wilson and Max Muller.* Moreover it is not correct to say that the names Krita, Treta, Dwapara, and Kali, are used here 'for the first time,' because we shall presently find that these names are used, though not in the same sense, in the *Taittiriya Brahmana* and the *Vajasaneya Samhita*, both of

* Muir's O. S. T., I. 48.

which are of the same, if not of an earlier, date.

Says Mr. Rangacharya in his '*Yugas*' (p. 25):—
 "This passage has been variously interpreted, and it appears to me that we have here the myth concerning the Bull of Dharma, so frequently related in the Puranas and the Mahabharata (III. 190). According to the Amarakosa, it can be shown that the Sanskrit word *Vrishā* means both *bull* and *virtue* (Dharma). * *
 A bull, when lying down, appears to be using one of its feet so as to press against the earth; when it tries to get up, two of its feet are seen to be applied to the earth; sometimes, when standing without motion, the animal may be seen to rest on only three of its feet; and, when walking and moving from place to place, it of course uses all four feet." It will be seen that this explanation is not on all fours with the passages quoted above from Manu and the Mahabharata, according to the latter of which, the bull has only one leg in the Kali, two in the Dwapara, three in the Treta, and its full complement of legs only in the Krita age. But it is possible that the double signification of '*Vrishā*' may have given rise to the ideas contained in all these three works. As '*Vrishā*' is dormant in the Kali by reason of its possessing one leg only, but is in full motion in the Krita age

when it has all its four legs, so also Rohita, to whom the passage of the Aitareya Brahmana is addressed, is advised to wander on like the '*Vriha*' in the Kritayuga, and not to go back to his father Harischandra to be inactive like it in the Kali age. It is therefore clear that the passage refers distinctly to the names of the four yugas and their respective standards of virtue.

Two other works, which though of a later date than the Aitareya Brahmana are still Vedic Srutis, refer to these yugas by name. The Mundaka Upanishad (I. 2. 1.) says that "the works, which in the Mantras the seers saw, spread manifoldly in the Treta Yuga;" and in the Gopatha Brahmana (I. 28.) mention is made of one '*Doshapati*,' who at the beginning of the Dwapara, is supposed to have acted as the eleventh Rishi.

As has been said above, these names also occur, though in a different sense, in the Taittiriya Brahmana and in the two recensions of the Vajasaneya Samhita in connection with the topic of Purushamedha. Different classes of persons are therein enumerated as appropriate sacrificial victims at the Purushamedha, and in so doing the Brahmana (III. 4. 1. 16.) says: "(Sacrifice) the gambler to the king of dice; the keeper of the gambling house to the Krita; the umpire to Treta; the spectator

to Dwapara ; and the man, who always remains there like a pillar, to Kuli." In both the recensions of the *Sambhita* of the White Yajus (*Madhyandina*, XXX. 18 ; *Kanwa*, XXXIV. 18.) a very similar statement is made. Says Weber (*J. L.* p. 113.) "The names of the three dice (*Krita*, *Treta* and *Dwapara*) in v. 18, are explained by Sayana, commenting on the corresponding passage of the *Taittiriya Brahmana*, as the name of the epic yugas, which are identical with these—a supposition which will not hold good here, though it may, perhaps, in the case of the *Taittiriya Brahmana*." But it is clear from the contexts that, neither in the one case nor in the other, the words denote anything else but the names of dice. This is also the opinion of Muir, who says : "In both places they denote dice, as does also the word *Krita* in *Chhandogya Upanishad* IV. 1.4."

In one of the parables of this *Upanishad*, one flamingo is reported as having said to another regarding one 'Raikva with the car':—"As (in a game of dice), all the lower casts belong to him who has won with the *Krita* cast, so whatever good deeds other people perform, belong to that *Raikva*." A little further down (IV. 3. 8.), the following statement occurs:—"Now these five (the eater *Vayu*, and his food *Agni*, *Aditya*, *Chandramas* and *Apas*) and the other

five (the eater Prana, and his food speech, sight, hearing and mind) make ten, and that is the Krita (the highest) cast. Therefore in all quarters three ten are food (and) Krita (the highest cast).” To understand the force of these passages one must first know the nature of the game of dice then in use. Even now a game exists, which is played with two pieces of wood, or of ivory, or of brass, each about an inch long and having four sides, one side of which being marked with 6 dots and the next three with 4, 3 and 1 dot respectively. These two pieces are held in the palm of one’s hand and rolled on to the ground. The number of dots on the side turned topmost indicates the number of points gained by the player, which regulates the motions of certain pawn-like pieces on what nearly resembles a chess board. The game referred to in the Upanishad seems to have been a little different. The dice was then, as Griffith says, made of the nuts of the Vibhitaka tree, and the four sides seem to have been known by the names of Kali, Dwapara, Treta and Krita, and to have been marked in order with one, two, three and four dots on the four sides of the piece. If the player succeeded, when rolling the piece on to the ground, in making the Krita side with four dots turn up topmost, he appears to have thereby

scored the largest number of points, namely, ten, which is the total number of all the dots on the piece ($4 + 3 + 2 + 1 = 10$).

The meaning of the first of the passages quoted above from the Upanishad is that just as the person who succeeds in making the gambling piece turn up with the Krita side topmost scores ten points, that being the total number of dots of the four sides thereof, so also Raikva's good deeds are so vast and varied that the merit of others also goes to him, i. e., accounts for nothing in the eyes of the public before the grandeur of his merit. The other passage denotes that Vayu, as Vayu, absorbs the four others and, as Prana, swallows up the four senses during sleep. These ten are said to be the Krita cast, which has already been said to swallow up the lower casts and thus secure ten points to the winner. "Therefore," says our Upanishad, "in all quarters (which are ten, including Zenith and Nadir), those ten are food and Krita." Says the commentator Sri Sankara, "Thus those numbers (4, 3, 2 and 1) making up ten constitute the Krita cast. Since this is so, therefore, in all the quarters, fire etc. and speech etc. are the food,—because of the number ten being common to both." So much explanation of this obscure passage is

enough for our present purpose, which is to show that, according to the Upanishad, the gambling die was marked in order with 4, 3, 2 and 1 dot on its four sides.

There is a passage in the Taittiriya Brahmana (1. 5. 11.), which also uses the names Kṛita and Kali in a similar sense. In recommending that only four *stomas* (eulogistic verses) should be used in the Jyotishtoma sacrifices, it says: "That in which there are four *stomas* is Kṛita, then that in which there are five is Kali; therefore there must be only four *stomas*." Now if it be remembered that the Kali side, containing one dot, adjoined the Kṛita side with four dots, it becomes clear that after the Kṛita comes the Kali side, and not a side with five dots. As analogy very largely served the place of argument in the days when the elaborate disquisitions of the Brahmanas were being put in shape, in order to prove that there should be only four *stomas*, recourse was had to the gambling die, each point of which was fancifully compared to a *stoma*. The largest number of dots on any one side having been only four, the *stomas* also were not to exceed that number.

Thus it is evident that in the Taittiriya Brahmana, Vajasaneya Samhita and Chhandogya Upanishad, these words are not used, as in the Aitareya

Brahmana, to denote the yugas bearing those names, but rather signify the sides of a gambling piece. What then was the original signification of these words? To take up first the words Krita and Treta, they appear to me to have originally meant 'the fourth' or 'four,' and 'the third' or 'three,' respectively. Krita and Treta are derived from the same roots as the Latin '*Quartus*' and '*Tertius*'. In Sanskrit dictionaries the word Krita is taken also to mean 'four', a signification which dates from the earliest times of Aryan history and which must not be supposed to have recently arisen in India from the circumstance that the Kritayuga is the fourth prior yuga, consisting of four times the period of the Kaliyuga. The word Kali is generally derived from the root '*Kal*,' to count; and very probably the number one was originally, as now, known also by that name. Just as now in India, when a person is asked in the vernaculars to count the numerals, he is generally told to 'Say one, two,' so that the first of the numerals sometimes does duty for the process of counting, so also the word Kali, denoting one, might have given rise to the idea of counting signified by the root '*Kal*.' Besides, if we remember that the first side of a die marked with one dot was known as Kali and that the third side with three

dots and the fourth side with four dots were named Treta and Krita respectively, it becomes clear that these three words were originally only numerals.

The word 'Dwapara' has a different story. On its face, it is a compound of two words 'Dwa' and 'para.' If a person, acquainted neither with the names of the yugas nor with those of the casts of dice, were to be asked to interpret the word, he would unhesitatingly say that it meant 'the second para,' for that is the literal, and, I may also say, the original signification. It will be shown, in a subsequent chapter that in the early Vedic times, there existed a cycle of one thousand years, which was probably known also as '*Para*,' and that two such cycles had intervened between the epoch of Ikshwaku and the beginning of the Kali-yuga. If '*Para*' was therefore a duration of 1000 years, the word 'Dwapara' must have meant 'the second period of 1000 years.' In the opinion of the late Taranatha Tarka Vachaspati, Dwapara is so called because it came after (*para*) the first two (*dwa*) yugas: द्वाभ्यां (सत्यवेताभ्यां) परः द्वापरः॥ Thus, according to either of these interpretations, the word Dwapara is a term decidedly belonging to the nomenclature of the Chronology of Ancient India.

It is not perhaps generally known that gambling was once the besetting vice of the Kshatriya community in India. The Epic tells us many stories of kings having been ruined by this fatal game, notably of Nala and Yudhishtira, both of whom, however perfect they might in every other respect have been, proved to be extremely susceptible to the allurements of dice. So disastrous had it come to be to the welfare of the Aryans in India even in the very earliest times, that a great Rishi, Kavasha Ailusha by name, stood up to earnestly oppose it. The force and the persuasiveness of the preaching of this ancient Reformer is revealed to us in a fine hymn* of fourteen verses, wherein he graphically depicts the hollow pleasures and the real dangers of this questionable pastime. When this kind of gambling had attained firm hold in Aryavarta, each of the four sides of the die came to be known by the name of the number of dots on it, or in other words, by the names, Krita, Treta, Dwita† and Kali. When the idea of the four yugas subsequently took shape, the word 'Dwita,' the name of the side marked with two dots, might have given place to the word 'Dwapara.'

* Rig Veda, X. 34.

† This word was well-known at the time, as it occurs many times in the Rig Veda, though in a different sense.

It was about the time of the War that the yuga-system had first come into existence, for these four yugas, as we have seen, are referred to for the first time in the Atharva Veda Samhita and in the Aitareya Brahmana. As has been remarked above, it will be duly proved in another chapter that a real historical period of two cycles of 1000 years each, dating from the epoch of Ikshwaku, the son of Vaivasvata Manu, came to an end a few years after the Mahabharata War. At this time there were also vague recollections of a pre-historic age preceding the epoch of Ikshwaku. This was probably the first age of the Gods (*Devanam Prathama Yuga*), referred to in the Rig Vedic hymn (X. 72. 2), a period lost in mist and stories of deluge.* Thus there were three distinct ages or yugas preceding the War, namely, the two historical cycles of 1000 years each and the mythical age before the times of Ikshwaku.

There was still another age which commenced soon after the war and which was made to last for 1000 years on the analogy of the cycle of 1000 years which came to a close at that time. This yuga, which was then current, was the first or the 'Kali' age; and

* Taittiriya Samhita, VII. 1. 5, Satapatha Brahmana. 1. 8.; VII. 5. 1. 5; Kathaka Samhita, XI. 2.

the immediately preceding age was already known by the name of 'Dwapara'. The next prior age, which, according to the Puranas,* commenced at the time of Ikshwaku and Pururavas, the progenitors of the Solar and Lunar dynasties, was named as the third or the 'Treta' yuga; and the earliest mythical times, preceding the time of Ikshwaku, was the fourth or the 'Krita' yuga.

An historical period of 2,000 years having come to an end soon after the War, the Dwaparayuga seems to have been confounded with the whole of that period; and the Kaliyuga was supposed to last, as we have already seen, for a period of 1,000 years. If the preceding Dwapara, which was the second age, was to last for 2,000 years or double the period of the Kali, it followed as a matter of course that the Treta or the third age should last for thrice that period, or for 3,000 years, and that the Krita or the fourth yuga should extend for a period of 4,000 years. Moreover the number of dots on the Krita, Treta, Dwapara and Kali sides of a die were four, three, two and one respectively. It is probable that the difference in the periods for the four yugas was also due to the analogy of this model.

* Bhagavata, IX. 14. 49.

See also Ramayana, Uttara Kanda, Ch. 74; Warren's Kala Sankalita, pp 358 and 366.

Lastly, I shall briefly refer to the views* of Professor Rangacharya on the subject. He considers that the Kritayuga was so named, because it was an age 'of deeds,' "when everything that had to be done was done as a matter of course."† I submit that this is a secondary signification, which subsequently came sometimes to be attached to the word. Such fanciful interpretations do occur in many of our ancient writings like the Brahmanas, the Mahabharata and the Puranas; but instead of having been meant to give the historical origin of the words explained, they were merely used to drive home the full force of the words in all possible and fanciful aspects. As has been said above, the words Krita and Treta were originally numerals derived from the same roots as the Latin *Quartus* and *Tertius*, and are therefore similar in origin to the names of the Geological Epochs, *Quaternary* and *Tertiary*. Mr. Rangacharya interprets 'Dwapara' as 'doubt or philosophy', and 'Treta' as 'a collection of threes'; and says that the Yugas were so called because the Dwapara was an age of philosophy and the Treta was the yuga when the three fires of sacrifices, the three castes and the three classes of gods were, according to the

* The Yugas, pp. 35, 36 and 42.

† Vide also Mahabharata, III. CXLIX. 12.

Puranas, supposed to have come first into existence. Without discussing the fatal questions whether the Treta yuga was really so considered at the time when these names came into being and whether the Dwapara means, or actually was, an age of philosophy, I shall be content with briefly pointing out that both the Parasara and Manusmritis attribute the exactly contrary characteristics to these yugas.

तपः परं कृतयुगे त्रेतायां ज्ञानमुच्यते ।

द्वापरे यज्ञमेवाहुः दानमेकं कलौ युगे ॥*

“Spiritual meditation predominates in the Kritayuga and spiritual knowledge in the Treta. They say that sacrifice only prevails in the Dwapara and that liberality alone survives in the Kaliyuga.” If Manu, which most scholars place before the beginning of the Christian Era, may be expected to hand down the old traditions more or less faithfully, we find that the leading characteristic attributed to the Dwapara is not ‘philosophy,’ but sacrifice, and to the Treta, is not ‘sacrifice,’ but knowledge, the exact reverse of Mr. Rangacharya’s contention. Moreover, it may also be remembered that the greatest Hindu lexicographer of our times, the late Taranatha Tarka Vachaspati, interprets the word Dwapara in a quite different manner.

* Parasara Madhaviya, I. 23; Manusmriti, I. 86.

accounts of certain things purporting to be narrated by a band of Rishis assembled together at a sacrificial session were handed down from generation to generation and these were after some time committed to writing. The later Puranas, devoted to the exaltation of a particular deity and to the inculcation of certain doctrines, derived their accounts of these kings from the earliest written Puranas and not from the oral tradition." There were a class of persons called *Sutas*, of whom Lomahastham is a typical instance, "who were charged with the record of political and temporal events. The Suta, that is, a bard or panegyrist, was intended to celebrate the exploits of Princes and had, according to the Vayu and Padma Puranas right by birth and profession to narrate the Puranas, in preference even to the Brahmanas.*" The Sutas were consequently well acquainted with the lists of ancestors kept in every family of consequence for recital on marriage occasions and for worship at offerings to ancestral manes.

The lists of dynasties contained in these Puranas are brought up to date in four different places, namely, at the descriptions respectively of the

* Wilson's *Loken Purana*, Introduction.

The Vālmīki Purāṇa names in order the various kings of the different dynasties down to the Andhrabhritya, the thirty kings of which line alone are said to have ruled for 456 years. It continues: "After these (the Andhrabhrityas), various races will reign; as seven Abhiras, ten Gaudāhilas, sixteen Sakas, eight Yavanas, fourteen Tusharas, thirty Mundas, eleven Maunas, who will be sovereigns of the earth for 1390* years; and then eleven Pauras will be kings for three hundred years. When these are destroyed, the Kaiṅkila Yavanas, who will not be Kṣatriyas, will rule over the Ujjain § country, the chief of whom will be Vindhyaśakti: his son will be Puranjaya; his son will be Madachandra; his son will be Dharmā, from whom will be Gādā. Then Bhutanandina, then Sumanda and his brothers Nandiyasas, Sisuka and Pravira: these will rule for a hundred and six years. Then from

* This figure is given in Wilson's texts and also in the Madras Edition. But Hall finds 1399 in certain manuscripts, evidently a mistake based upon the statement of the Bhāgavata.

§ I follow the reading of the Madras Edition, supported as it is by two commentaries, Sridharmiya and Viśvachittiya, all of which read *Nijān*, the country of Ujjala.

be masters of the banks of the Indus, Darvika, the Chandrabhaga and Kasmira. *These will, all, be contemporary monarchs, reigning over the earth, kings of churlish spirit, violent temper, and ever addicted to falsehood and wickedness.*" So comes to an end the account of kings in the Vishnu Purana. The Matsya does not go further than the Kaikila dynasty which it calls Kilakila, the Bhagavata not further than Viswasphutika whom it styles Viswasphuti, and the Vayu not further than the Kanakas, Lords of the Amazon country. The subsequent portions* of these

* The Vishnu Purana here breaks into a didactic strain and the stanzas are fine, poetical and characteristically Hindu. It says: "I have now given you a summary account of the sovereigns of the earth. * * These and other kings, who, with perishable frames, have possessed this ever-enduring world, and who, blinded with deceptive notions of individual occupation, have indulged the feeling that suggests "This earth is mine, it is my son's, it belongs to my dynasty," have all, passed away. * * Earth laughs, as if smiling with autumnal flowers, to behold her kings unable to effect the subjugation of themselves. * * When I (the earth) hear a king sending word to another, by his ambassador, "This earth is mine; immediately resign your pretensions to it," I am moved to violent laughter; but it soon subsides, in pity for the infatuated fool. * * He who was Kartavirya subdued innumerable enemies and conquered the seven zones of the earth; but now he is only the topic of a theme, a subject for affirmation and contradiction. * * Mandhatri, the Emperor of the universe, is embodied only in a legend. Bhagiratha, Sagara, Yudhishtira and others have been. Is it so? Have they really existed? Where are they now? We know not."

Andhra dynasty, 1601 years for the dynasties down to the Kaikilas, 30 years for a certain Ballika king, and a period of 156 years for the reigns of the first Kaikila king Vinidhyasakti and his son Pravira. It is not possible for a father and son to reign for 156 years and the blunder is probably due to the Vayu having been touched up long after the time of the Kaikila kings. There is much reason to think that the accounts it contains of the dynasties subsequent to the Andhrabhrityas were modelled, as it itself confesses*, on an earlier Purana. It says: "The kings who are to succeed the Andhras have already been foretold by persons acquainted with the Puranas." We can think of no earlier Purana from which it might have copied than the Vishnu which presents the appearance of a compact record, one of whose main objects appearing to be the fixing of the chronology of Ancient India.

We shall therefore go back to the Vishnu which gives a period of 1865 years for the interval between the Mahabharata War and the end of the Andhrabhritya dynasty and another of 1690 years for the dynasties of kings that intervened

* II, 37, 411.

c 480 A. D. * * After the death of Skandh Gupta the attacks of the Hunas which began during his reign and probably also internal dissensions led to divisions in the Empire. * * The later Gupta period comes to an end in 606 A. D. when Harsha Vardhan of Kanouj gained paramount power over the whole of Hindūstan. * We know from inscriptions that Skandh Gupta's dominions extended from the borders of Eastern Nepal to the shores of the Gulf of Kach, that his peace was disturbed by the inroads of the Hunas, and that on his death this vast Empire soon broke up into a number of small principalities. In Central India, in a portion of his Western dominions, he was succeeded by Buddh Gupta, probably his son, whose inscription (date 165 Gupta Era, 484-5 A. D.) has been found at Erum in the Central Provinces. Skandh Gupta was succeeded in the East by Krishn Gupta, and, in another part of his dominions, by his brother Sthira Gupta who seems to have reigned till 490 A. D. The statement of both the Vayu and Vishnu Puranas to the effect that the Guptas ruled as far as Prayag is fully corroborated by an inscription of Samudra Gupta, No. 7 in the stone list, which can even now be traced the famous lot at Allahabad (Prayag)

about 388 A. D., the period of 106 years given by the Vishnu for the Kaikilas would bring down the date of the last kings of that dynasty to about 494 A. D. This date receives further support if we identify, as Dr. Fergusson† does, Maharajadhiraja Srideva Gupta, the maternal grandfather of Pravarasena according to the grant, with Maharajadhiraja Chandra Gupta. The grant does not probably give the name of the king, but only his title. This Chandra Gupta is the sixth in our Gupta list and the son of Samudra Gupta of the Allahabad Lat fame and reigned from about 380 to 414 A. D. His daughter's son Pravarasena would therefore have been contemporary with his son's sons, namely, Skanda Gupta who reigned till about 480 and Sthira Gupta who lived till about 490.

We may also adduce in support of this date for the Kaikilas what Fergusson says with regard to the Ajunta caves on which these Pravarasena inscriptions are found : " The interest of these consists in their being almost unique specimens of the architecture and arts of India during the great Gupta period, when Theodosius II was Emperor of the East and at a time when Bahram Gour, the

† History of Indian and Eastern Architecture, p. 157.

oldest and most eminent, is preserved intact. By a strange fatality, the inscription has been obliterated wherever a royal name existed, so that one is tempted to suppose that the destruction was intentional." The Seoni copper-plate grants, which were deciphered by Prinsep, tell us that one king Pravarasena ruled over Vakataka and that his great-grandson Rudrasena "was followed on the throne by Pravarasena II, the son of Prabhavati Gupta, the daughter of the conformer to ancestral customs, the upright conqueror of armies, the Maharajadhiraja Srilewa Gupta." This "Pravarasena of the race of Vishnurudra, the Rishi, performer of various sacrifices ruled over Vakataka,"* Dr. Bhau Daji thinks that the Pravarasena of the grant is the same as the other of the same name, descendant of Vinধ্যasakti, mentioned in the inscription, as both the grant and the inscription say that Pravarasena ruled over the Vakataka country. He also considers "that these kings ruled in Eastern and Central India, shortly after the Sak† dynasty, which ruled in Saurashtra from about 119 to about 388 A. D. If this line sprang up to power

* J. Bengal R. A. S. V. 729.

† J. Bombay R. A. S. VIII, p. 248.

about 388 A. D., the period of 106 years given by the Vishnu for the Kainkilas would bring down the date of the last kings of that dynasty to about 494 A. D. This date receives further support if we identify, as Dr. Fergusson† does, Mahamajdhiraja Srideva Gupta, the maternal grandfather of Pravarasena according to the grant, with Mahamajdhiraja Chandra Gupta. The grant does not probably give the name of the king, but only his title. This Chandra Gupta is the sixth in our Gupta list and the son of Samudra Gupta of the Allahabad Lat fame and reigned from about 380 to 414 A. D. His daughter's son Pravarsena would therefore have been contemporary with his son's sons, namely, Skanda Gupta who reigned till about 480 and Shiva Gupta who lived till about 490.

We may also adduce in support of this date for the Kainkilas what Fergusson says with regard to the Ajanta caves on which these Pravarsena inscriptions are found : " The interest of these consists in their being almost unique specimens of the architecture and arts of India during the great Gupta period, when Theodosius II was Emperor of the East and at a time when Bahram Gour, the

† History of Indian and Eastern Architecture, p, 157.

Sassanian, is said to have visited India. He reigned from 420 to 440 A. D. * * The figures on the roof of the cave are not Indians, but Persians, and the costumes those of the Sassanian period." It may also be observed here that the Rajatarangini informs us that Matri Gupta, a Court poet of Vikramaditya Sri Hansha, who will be shown presently to have reigned in the first half of the sixth century after Christ, was made the king of Kashmir by the latter in succession to one Hiranya who was the tenth in succession on the throne of Kashmir from one Narendraditya, otherwise known as Khinkhila.* Probably the Vindhyasakti family of Kainkilas was related to, and contemporary with Narendraditya Khinkhila of Kashmir.

Thus of the kings Vindhyasakti and Pravarsena mentioned in the inscription and the grant, the latter very probably reigned till about 480 or 490 A. D. He corresponds to Pravara, descendant of Vindhyasakti, specified in the Puranas. The name of the country over which these Kainkilas reigned is stated to be Ujjain in the Madras Edition of the Vishnu Purana and also in the two

commentaries thereon above referred to. Very probably these Vinkataka Princes extended their sway over Ujjain also, as the inscriptions are at Ajunta very near that country.

The Vishnu Purana refers to "Pushyamitra, Patumitra and others to the number of thirteen" among the "contemporary" dynasties. Now, Skanda Gupta is stated in the Bhitari stone-pillar inscription to have restored the fallen fortunes of the Gupta race, to have conquered the *Pushyamitras* and fought with the *Hunas*. The *Pushyamitras* do not occur to my knowledge anywhere else in Ancient Indian History and I believe that the *Pushyamitra and others* of the Purana must be identified with them. This identification gives additional force to the inference we have already drawn that Pravira or Pravarasena, one of the *contemporary* princes of the Vishnu Purana, lived down to 480 or 490 A. D. For, the *Pushyamitras* are contemporary with Skanda Gupta on the one hand according to the inscription and with Pravira on the other according to the Purana; and Skanda Gupta lived down to 480, and his brother Sthira Gupta to 490 A. D.

There is an inscription on the Nasik cave, No. 12, which refers to one "Patamitraka, a king

of the Northern region." We cannot say whether he was the same as "Patumnitra" of the Purana.

The Vishnu further says that barbarian kings will then hold sway over the countries on the banks of the Indus. This statement is corroborated by independent evidence. It may be stated that the white Huns invaded India in the latter part of the fifth century. Says Rapson § : "The leader of the Huna invasion who conquered the kingdom of Gandhara (Kandahar) from the Kidara Kushanas (who were until then ruling there) and established his capital at Sakala probably c. 465-70 A. D. is known from Chinese sources as Lal-Lih." He was the father of Toramana, which latter king was probably enabled by the death of Skanda Gupta (480 A.D.) to invade and hold Central India. Rapson continues : "The Huna coinage of 471-486 A. D. almost certainly testify to the Huna conquest of the *Lower Indus* country and Western Rajputana." We have thus by various lines of investigation arrived at the conclusion that the date of these *contemporary princes* is between 480 and 490, or about 485 A. D.

§ Encyclopædia of Indo-Aryan Research : Indian coins, p. 28.

It will be readily perceived that the date must be after the death of Skanda Gupta, but still within a few years of his death. For when he was alive the Empire was vast and important and the Hunas were not able to make headway against him; and if the Empire were so extensive at the date of the Purana, it would not have been disposed of in the few words the Purana chooses to describe it with. The Purana therefore describes the Empire after the disruption and confusion consequent on his death, when the barbarian raids were becoming prominent. Yet the date cannot be long after his death, for Pravira one of the *contemporary* princes was, as pointed out above, a contemporary of Skanda Gupta. Skanda Gupta's last inscription belongs to 468 A. D. but it is generally supposed that he died about 480. The earliest inscription of his direct successor Budha Gupta is dated 484-5 A.D., and I adopt it as the safest date for the *contemporary* princes of the Purana.

So far we have been giving positive evidence in support of this date; we may also establish its correctness by means of negative proof. The great Vallabhis of Guzarat rose to independence

Yayati Kesari, a Hindu King, whose dynasty reigned subsequently for nearly seven centuries. The Purana mentions that at the time of the "contemporary princes" that country was ruled over by Devarakshitas, either the Yavanas or the dynasty of kings, surnamed Deva, subverted by them. If the Purana had been written after the expiration of the fifth century, the Kesari dynasty would have been prominently noticed.

The early Western Chalukyas of Badami beginning with Jayasimba, Ranaga, and the great Satyasraya Sri Pulakesi I, the Gurjaras of Bharoch beginning with Dadda and Jayabhatta, the Parivrajaka Malharajas Damodara and Hastin, Naravardhana of Thanesar and his descendants, the Maukharivarmanas Harivarman, Adityavarman and Iswaravarman, the Kulachuri kings Kakavarma and Sankaragana, Buddharaja of Chedi, Raja Diwanij of Sindh, Purnavarman of Western Magadha, Sasanka of Karnasavarna, and many others besides, reigned in different parts of India about the sixth century A. D. And none of them is referred to in the Purana. Nor does it make any mention of the famous Malwa and Kanouj dynasties which the Chinese travellers Hionen Thsing and Man Twan Lin state as having

played the leading part in that period. From the former, who travelled in India between 629 and 645 A. D., we learn that Siladitya Harshavardhana, the hero of Ban's *Harshacharita*, was on the throne of Kanyakubja from 610 to 650. Ma-tsun Lin gives 648 as the time before which Siladitya was dead and we have inscriptions recording his invasion of Vallabhi country between 633 and 640. His predecessor on the throne was his brother Rajyavardhana who succeeded his father Prabhakaravardhana, the successor of Siladitya Pratapsila of Malwa called Bhoja by Ferishta. Hiouen Tsiang gives 50 years for the reign of Siladitya I of Malwa who, he says, reigned 60 years before his time and succeeded Vikramaditya. Max Müller consequently places Vikramaditya "before 550 A. D."* Kallhana's *Rajatarangini* also informs us that Siladitya of Malwa succeeded Vikramaditya. Fergusson gives† the following dates for the Ujjain and Kanauj dynasties:—

Vasudeva Founder

Vikramaditya I .. 470-495 A. D.

Sri Harsha .. 495-515 ..

* *India, what can it teach us*, First Edition, Note G

† *History of Indian and Eastern Architecture*, p. 733

Vikramaditya II, the Great . .	515-550 A. D.
Siladitya I of Malwa . .	550-580 „
Prabhakara	580-605 „
Rajyavardhana	605-610 „
Siladitya II of Kanouj . .	610-648 „

Max Müller tells us that the *Satrunjaya Mahatmya* gives 544 A. D., as the beginning of Vikramaditya's reign and it does not nullify the force of the tradition contained in it, if, as Bühler informs us, the *Mahatmya* was a wretched forgery of the twelfth or fourteenth century. According to a Hindustani chronicler, † Mir Chér-i-Ali Af-os, a King, named Bhoja, who reigned about 1018 A. D., lived 542 years after Vikramaditya,—which takes back the latter's date to about 476 A. D. Ferguson says "Wilford reports that this Vikramaditya ascended the throne of Malwa in 441 (*Asiatic Researches* IX, 150) reckoning from the first of Salivahana or 520 A. D., or according to the *Agni Purana*, 437 years after the same epoch, or 516 (*Asiatic Researches* IX, 161)." Moreover, some at least of the nine gems of his court are known to have lived in the sixth century A.D. In an inscription at Buddha Gaya

† *Jour. Asia*. 1844. p. 354, quoted in Weber's *Indian Literature*, p. 20, note 11.

(As Res Vol. I p. 286.), dated Samvat 1015 or 948 A D, we find the following :—“ Vikramaditya was certainly a king renowned in the world. So in his court were nine learned men * * * one of whom was Amara Simha.” Cunningham shows that the temple at Buddha Gaya is referred to by Hsuen Tsang (629), but not by Fa Hian (399), and that consequently its builder Amara, one of the *Nararatnani* and composer of the *Amarakosa*, must have lived about 500 A.D. It may also be remarked that *Amarakosa* was translated ¶ into the Chinese in the sixth century. We know also that Varahamihira, another ornament of Vikrama's court, died in 587 §. In an inscription dated 634 A D, Kalidasa and Bharavi are mentioned among the greatest poets and Dhanvantari is mentioned by Dandin (600 A.D.) as having been a distinguished physician; and both Kalidasa and Dhanvantari were among the gems of Vikrama's court. Yet Professor Macdonell denies that Vikramaditya ever was an historical personage. The authorities, however, against his opinion, it will be readily seen, are overwhelming. The truthful Albiruni

¶ Dutt's Ancient India II. 123.

§ Thibaut's Panchasiddhantika, p. XXIX. J. R. A. S: N. S. I. 407.

(1031 A.D.) says that Vikramaditya put the Śaka King to flight and killed him in the region of Korur between Multan and the castle of Loni; and the Rajatarangini speaks of his having sent one Matri Gupta, a poet, as his Viceroy at Kashmir. We cannot therefore but concur with Dr. Kern when he says: • “The first half of the sixth century is in reality the most illustrious period of Sanskrit Literature; at that time the nine gems flourished under the patronage of an art loving prince,” the great King Vikramaditya.

Says R. C. Dutt:† “The victor of a great and patriotic war, the patron of reviving Hinduism, the centre of all that is best and most beautiful in modern Sanskrit Literature and the subject of a hundred legends, Vikramaditya the Great is to the Hindus what Charlemagne is to the French, what Alfred is to the English, what Asoka is to Buddhists and what Harun Ar’Rashid is to Mahomedans. To the learned as to the illiterate, to the poet as to the story-teller, to old men as to schoolboys, his name is as familiar in India as the

• Brihatsamhita, p 209.

† Civilisation in Ancient India, Book V ch 1.

name of any prince or potentate in any country." Many a child in India is lulled to sleep by stories drawn from his life. Next to the heroes of the two great national epics, the name of this doughty champion looms the brightest on the Indian horizon. He was known as Vikramaditya, Sakari (Rajatarangini), Sahasanka (Bhavishtyottam Purana), Bhoja ‡ (Ballala Misk), Sri Harsha (Rajatarangini), Vishvasila (Kathasutisagara) and Sri (Albiruni) and probably also Yasodharman, who according to one Mandasor inscription lived in Samvat 589 (533 A.D.), and according to another § reigned over the whole of Northern India "from the river Lauhitya or Brahmaputra to the Western ocean and from the Himalayas to the Mahendra mountain and possessed countries which not even the Guptas and Hunas could subdue and had homage paid him even by Mihiracula," the son of the white Hun Toramana. Two magnificent monoliths of this great Yasodharman are still to be seen in Northern India. Such a king, justly famous in his own and subsequent times, is not

‡ According to the *Albareza Brahmana* this is the old title of the kings in the Southern region.

§ *Corpus Inscript. Indic.* Vol. III 145-50.

even referred to in the Vishnu Purana, nor are Siladitya of Malwa who succeeded him, and the enlightened Siladitya II of Kanauj. On the other hand, according to one edition of it, the country over which he ruled is said to have been protected by the Kainkila Yavanas. Only one explanation is possible. Every one of those kings mentioned above as having reigned in the sixth century A.D., lived some time after the last portions of the genealogies of the Vishnu Purana were written up. It certainly was possible for the writer to have mentioned these later kings, as he has done the earlier ones, if only he had known of them. But as it is he ends with a list of certain *contemporary kings*, who, as I have already shown, lived about 485 A. D., or in other words, only a few decades before Vikramaditya and his near contemporaries were the rulers of Hindustan.

We may therefore conclude that the last chronological portion at least of the Vishnu Purana was written about 485 A.D. We have already shown that according to it a period of 3661 years is supposed to have intervened between that date and that of Yudhishtira* or the beginning of the Kali

* According to current belief, the reign of Yudhishtira lasted for a few years, beginning soon after the Mahabharata War and ending with the advent of Kali Yuga.

era. Consequently the Purana seems to consider the Kali Yuga to have begun in or about (3661-485 or), 3176 B C. But I have in my book, *The Chronology of Ancient India, First Series*, endeavoured to prove by various lines of reasoning that the Kali Yuga began in 1177—6 B C., *i.e.*, exactly two thousand years after the date yielded by the Purana. Why and how has such a discrepancy been brought about?

We shall presently be able to discover the reasons; but let us first enquire how far the kings and dynasties named in the Purana may be considered to be historical. Of the Pre-Chandragupta kings we may only say in a general manner, as I have already stated in my first volume, that the number of kings mentioned in the Puranas is about the same as that given by Megasthenes (300 B C.) Of these Bimbisara, Ajatasatru and Nanda are referred to in Buddhist works, the first two as contemporaries of Lord Buddha. Of Chandragupta Maurya himself we know that Megasthenes, an ambassador at his court, has given us a good deal of information regarding him and his subjects and country. Bindusara, who succeeded Chandragupta, seems to have also been known as

Amitraghata, and ambassadors* were sent to his court by Antiokhos Soter and Ptolemy Philadelphus in the earlier half of the third century B. C. Asoka the Great, the next King, refers in his inscriptions to certain contemporary kings, Antiochos II of Syria, Ptolemy Philadelphus of Egypt, Antigonas Gonatas of Macedonia, Magas of Cyrene and Alexander of Epirus, all of whom were alive in the year 258 B. C. Asoka's grandson, according to the Purana, was Dasaratha and the name "is genuine, being confirmed by the inscriptions in the Nagajuni caves near Gaya, which record the bestowal of the caves upon the Ajivakas (a Vaishnavite sect) by Dasaratha immediately after his accession. The characters of these inscriptions are the same as in those of Asoka." † The Purana makes one Salisuka the successor's successor of Dasaratha, and he is referred to as one of the latest princes by Garga‡ who lived in the second century B. C. The last of the ten princes of this Maurya dynasty, who reigned in all for 137 years, was killed, and his throne usurped, by his general Pushpamitra. Both Pushpamitra and

* Duff's Chronology of India, p. 11.

† V. A. Smith's Asoka, p. 45.

‡ Kerr's Brihatsamhita, p. 36.

his son Agnimitra are referred to in Kalidasa's *Malavāgnimitra* and General Cunningham had in his possession "two coins of an Agnimitra, containing characters similar to those of Asoka's inscriptions §." Garga mentions ¶ one Agnimitra as king of a country called Bhadrupaka ; but it is not clear whether he is the same as Pushyamitra's son. There were eight more kings of this Sunga dynasty which is said to have held the reins of Government for 112 years and to have been succeeded by the Kanwas, a Dwija dynasty which lasted for 45 years. The Vishnu Purana further states that the last of the Kanwas "will be killed by a powerful servant of the Andhra tribe, named Sipraka, who will become king" and found the Andhrabhritya dynasty.

We have independent evidence to show that the Andhrabhrityas had been in power from the earlier half of the second century B. C. "Names of three of the early Princes of this dynasty occur in inscriptions belonging to the first half of the second century B. C. Simuka Satavahana, mentioned in an inscription at Nanaghat, has been identified by

§ Wilson's Vishnu Purana, Ed by Hall, IV. 91.

¶ Kern's Brihatzambhita, p. 38.

Bühler with the Prince whose name, under the forms Sindhuka, Sisuka, Sipraka, and Chhismaka, stands first in the Puranic lists of the Andhras as founder of the dynasty. Krishna Satavahana, of whom there is an inscription at Nasik of the same period, is the second Prince of these Puranic lists, there called a brother of Simuka. Satakarni, whose name with that of his wife Nayanika occurs in a Nanaghat inscription of the same time as that of Simuka, has been identified with the third Prince of the Puranic lists. He is probably, too, the Satakarni King whom Kharavela of Kalinga, in the Hathigumpha inscription, claims to have protected in the second year of his reign, * in the year 165 of the Maurya era which began with the accession of Chandragupta to the throne. From the Greek geographer Ptolemy (151 A. D.) we learn that in his time one Siro Polemios ruled over a country whose capital was Paithan.† This king has been correctly identified with Siri Pulumavi or Pulumayi of the inscriptions and with Pulimat or Pulomat, the seventh king from the last of the

* Duff's Chronology of India, pp. 14 and 16. Reference under dates B. C. 180 and 150

† See Bhundharkar's Early History of the Deccan, sec. VI for this and subsequent details.

Andhrabhritya dynasty of the Vishnu Purana. "In the longest inscription of the four occurring in the cave temple at one extremity of the hill at Nasik, we are told that in the nineteenth year of the reign of King Pulumayi, the son of Vasisbthi, the cave was caused to be constructed * * by Gotami, the mother of King Satakarni Gotamiputra." He is there spoken of as a ruler of extensive dominions, "whose exploits rivalled those of Rama and Krishna" and as having left no "remnant of the race of Khagarata and re-established the glory of the Satavahana family." Another inscription purports to be an order of King Gotamiputra Satakarni, who can be no other than Gotamiputra the eighth from the last of the Puranic Andhra dynasty, granting a piece of land which was until then in the possession of one Ushabhadatta (Rishabhadatta.) There are three more inscriptions at Nasik referring to the reign of Sri Pulumayi. In two inscriptions in one of the caves at Kanheri and in one at Nasik the name of the reigning prince is given as Gotamiputra Sri Yama Satakarni, who corresponds to Yajna Sri Satakarni of the Puranas. There is a Kanheri inscription referring to Madhariputra Sakasena or Sri-sena, who has been identified by Bhagawanlal

Indraji with Sivasri Melhasiras of the Purnas, son of Pulamayi. One of the inscriptions on a cave at Nasik says that it was constructed by Ushavadata, son-in-law of King Kshaharata Nahapana and another mentions his having dedicated the cave monastery to Buddhist mendicant priests in the year 42. Two more inscriptions, one of Nasik and the other of Kauli, refer to him. This date as well as certain other dates referring to him as King Nahapana are believed by scholars to be connected with the era now known as Salivahana Sakabda, whose epoch is 78 A.D. As Gautamiputra was a contemporary, according to one of the above inscriptions, of Ushabhadata, he must be assigned to about $42 + 78$ or 120 A.D., a result which confirms the statement of Ptolemy (151 A.D.) that he (Ptolemy) was a contemporary of Pulamayi, the successor of Gautamiputra.

"We also learn from Ptolemy that Ziasenes reigned at Ozene (Ujjain) about the time when he wrote and was therefore a contemporary of Pulamayi. Ziasenes has, I think, been reasonably identified with Chashtani",* the contemporary and apparently successor of Nahapana. The allu-

* Bhandarkar's Early History of the Deccan, sec. VI.

tion in Gautamiputra's inscription to the extermination of the Kshatarata race is probably to a previous conquest of some of the Andhra territories by Nahapana, and to their recovery by Gautamiputra. Some of the places enumerated in Pulimayi's inscription as being subject to his father belonged, as Rishabhadata's inscriptions seem to show, to Nahapana. There is a Junagadh inscription of Saka 72 (150 A.D.) of Rudradaman. Western Kshatrapa, grand-son of Chashtana, stating that he twice conquered Satakarni, lord of the Dakshinapatha, probably Chatuspurna Vasishthiputra II, according to numismatic evidence the father of Yajnasri Gautamiputra. As after Yajnasri there reigned only three more kings of the Andhra dynasty, we must conclude that it came to an end about the first quarter of the third century A.D.

Thus it will be seen that the kings named in the dynasties of kings mentioned in the Puranas cannot be said to be fictitious; on the other hand, their statements are substantiated to some extent, as seen above, by reliable, independent evidence. But their chronology is in some particulars different from what we have been able to gather from the inscriptions, grants and coins. According to

the Vishnu Purana, the interval between the accession of Chandragupta Maurya and the end of the Andhra dynasty was a period of 750 years. As Chandragupta reigned in the last quarter of the fourth century B. C., the Andhras should have, according to the Puranas, come to an end about the middle of the fifth century A.D., whereas, as shown above, the last of the Andhras cannot belong to a later date than the first quarter of the third century A.D. Thus in this particular there is a discrepancy of about two centuries between the Purana and actual dates. Moreover, the Kaikila Yavanas must have begun their rule, as shown above, in the last quarter of the fourth century. But the Vishnu Purana places them 1690 years after the end of the Andhra dynasty. Let it be remembered that the names of the kings of all the dynasties down to the Andhras and also of the kings of the Kaikilas, one of the *contemporary* dynasties, are given in the Purana, but not the name of even a single king of the various dynasties who are stated by the Purana to have reigned between the end of the Andhra-bhritas and the beginning of the Kaikilas. To quote again the paragraph from the Vishnu: • •

“Yagnasri's son will be Vijaya; his son will be

Chandrasri; his son will be Pulomarchis. These thirty Andhrabhritya kings will reign 456 years. After these, various races will reign; as seven Abhiras*, ten Gardabhilas, sixteen Sakas, eight Yavanas, fourteen Tushanas, thirteen Mundas, eleven Maunas,—who will be sovereigns of the earth for 1690 years; and then eleven Pauras will be kings for 300 years. When they are destroyed, the Kainkila Yavanas will be kings, the chief of whom will be Vindhyaśakti; his son will be Paranjaya; * * *

It looks very strange that the interval of only about a century and a half between the last of the Andhras and the first of the Kainkilas should be represented in the Pauras as having been a period of 1690 years and that the particulars for the intermediate dynasties should be so very meagre, the names even of the kings not being given.

Thus it is clear that the Vishnu puts back the beginning of Kali by exactly 2000 years by the expedient of increasing by a few years the length of the reigns of the dynasties down to the Andhras and of introducing in the interval of a century and a half between the Andhras and Kainkilas a number of dynasties which are said to have reigned for 1690 years. It

is not, however, to be supposed that the intermediate dynasties of the Abhiras and others were wholly fictitious. Fergusson thinks that these dynasties could not have been earlier than the Gupta era (319 A. D.), nor have survived Vikramaditya the Great. He says :—"After the end of the Andhra dynasty, all the subsequent contemporary dynasties were thrown into hotch-pot—to use a legal expression—and a system of fraud and falsification commenced, which is the reproach of Indian History. " * I have already pointed out that in the Allahabad Lat inscription of Samudra Gupta some of these tribes are stated to have been conquered by him. Says Wilson in his translation of the Vishnu Purana : "Traces of the name of Abhiras occur in the Abiria of Ptolemy ; and the Abirs, as a distinct race, still exist in Guzerat. * * The Sakas are the Sacæ * * the Yavana kings may be the Greek Princes of Baktria, or rather, of Western India. The Tusharas may be the Parthians, or the Tochari, a Scythian race. The Murundas are the Murundæ of Ptolemy, probably a tribe of the Hunas. Wilford considers Maunas a tribe of the Huns. And the Garlabhinas seem to

* History of Architecture, p. 722.

have been a tribe in the West of India."† It is a mistake, however, to suppose that one tribe succeeded another in the sovereignty of India. They might, or might not, have been contemporary with one another; but they must have all held sway for a short time over different parts of India.

The third century and the first half of the fourth seem to have been an age of darkness and confusion, a period when all consecutive chronology was well-nigh forgotten. The Guptas had not as yet attained their importance and the old dynasty of the Andhras had become extinct. The Sali dynasty was then indeed in existence, but it held sway only over the Samashtra country. The chain of chronology, the several links of which more or less correctly corresponded to the measure of time from the epoch of the great war to that of the Andhras, suddenly snapped on the extinction of the latter for want of a paramount power which could be said to have succeeded the Andhras in the overlordship of Hindustan. And when the chain was attempted to be restored one hundred and fifty years later during the reigns of the descendants of Vindhyaśakti, a very large number of

† Vol. IV, p. 209.

links, not at all proportioned to the small interval, was introduced to represent the periods gratuitously assigned to the rule of a number of nearly contemporaneous tribes. When once the mistake was made of considering a number of almost contemporaneous insignificant tribes as having ruled in succession to one another, it certainly was possible to throw back the epoch of the Kali Yuga by exactly two thousand years, especially when in so doing the usual method of calculating the current era was not interfered with. For the method then was what is now in vogue with regard to the Kashmir, and till recently the Kollam era. The peculiarity of the Kashmir era is "that though it is to-day (February 1897) 4972, it is spoken of as 72." As I have already remarked in my book, at the time of Dr. Buchanan and Lieutenant-Colonel Warren who became famous in the first quarter of the last century, the Malayala Kollam era was supposed to have been counted by cycles of 1000 years beginning from 1176 B.C., but in the almanacs the figure for the thousands was usually left out and only those for the hundreds, tens and units were noted. If it is remembered that 1176 B.C., the epoch of the Malabar era,* was actually the beginning of the

* See *The Chronology of Ancient India, First Series*, pp 45-50.

Kali Yuga, and that the Kali was supposed even as late as the last quarter of the first century† A D to have begun in 1176 B.C., it will be readily seen that the current era of the time of the Kāṅkila could have been no other and the almanac-makers of the day omitted the figure for the thousands, as was the practice in Malabar till the end of the first quarter of the last century, or probably the figures for both the thousands and hundreds as is even now usual in Kashmir. Such a practice ought to have enabled our chronicler to put back the beginning of the Kali Yuga by exactly 2000 years without in any way disturbing the figures of the almanac-makers of his times. But none of these reasons can fully account for the Purana throwing back the date by that large period of time. It may be reasonably asked why the date was put back by only two thousand years and not by one, or three or four or more number of thousands of years.

In the second chapter of my first volume, I have discussed the interpretation of a certain sloka of Garga quoted in Varāhamihira's *Bṛhat-saṃhitā*; It runs thus:

† *Idem*, pp. 57-61.

आसन्मवासु मुनयस्सासति पृथ्वीं युधिष्ठिरे वृषतौ ।

पद्दिकपथाद्वियुतशककालस्तस्य राज्ञश्च ॥

"When King Yudhishtira ruled over the earth, the Sages (Rishi) were in the Magha. From that king's time the epoch of Saka was 26 times 25 years." The word 'Sakakala' in the above sloka certainly refers to the date of the Nirvana, for Gautama was known variously as the Sakya Prince, Sakya Simha and Sakya Muni, and Saka is one of the names by which he is known even in far-off China. The word Sakya is itself a derivative from the word Saka, for which we have the venerable authority of the illustrious Panini and his great critic-commentator Katyayana, both of whom all Sanskrit scholars agree in placing before the third century B. C. Panini's rules शाण्डिकादर्थाव्यः (4.3.92) and गर्गा दिभ्यो यञ् (4.1.105) refer to certain *Ganapāthas*, according to which the word *Sakya* is expressly said to be derived from *Saka*. It may also be noted that Dr. Bhandarkar* has shown that the first three words at least of these plural-ending *Ganapāthas* were certainly known to Panini. Consequently there is not the slightest doubt that

* Early History of the Deccan, sec. III.

Panini derived *Salya* from *Sala*, which latter forms the second word of the *Gargadi Ganapatha*. Again, Panini's rule कम्भोजाह्लुक् (4.1.175) has a *Varṇana* of Katyayana, namely, कम्भोजादिभ्यश्चिञ्, according to which rule and the *Ganapatha* attached thereto, the word *Sala* refers to a king of the Sakya race. Moreover, Panini's rule 5.5.124 is also an authority for the contention that the particle 'य' (*Shyad*) is sometimes added in the sense of *Svartha*, that is to say, for the proposition that *Sala* and *Salya* mean one and the same thing. In this way, Gautama might well have been known as a *Sala* or *Salya*, both words meaning *one of the Sala race*. I go even further and say that the modern meaning of *Era* for the word *Sala* arose from the fact that for long, the *Sala* era (Gautama's Nirvana Kali) was the only era prevalent in India and adopted by prince and people.

Thus Garga's sloka clearly shows that a certain number of years (षष्टिकयश्चि) before the epoch of the Nirvana, the era of Yudhishtira commenced. The term षष्टिकयश्चि was interpreted by me to mean twenty-six times twenty-five or 650 years.

My interpretation is to this effect : पट् च द्वे च तयो-
 स्समृद्धः षड्विकं (26) ॥ पथ च द्वे च तयोस्समाहारः
 षड्वि (25) ॥ षड्विकस्य पथद्वि (Panini पटीशेरे)
 षड्विकषड्वि. A parallel expression in the classic
 Naishadi, namely, नवद्वयद्वि, is interpreted by
 the famous commentator Mallinatha in a similar
 manner, namely, नवानां द्वयं लक्षगुणानयकद्वयं. When
 Navaka Dwayam means 9×2 , there is no reason
 why 'Shaddwika Panchadwi' should not mean
 26×25 . As I have already shown in my book,
 this method of expression was adopted because
 Garga professedly computed by the Saptarshi cycle,
 according to which the lapse of every one hundred
 years was marked by a new Nakshatra. As a
 Nakshatra was divided only into four padas, if the
 Rishis had moved $6\frac{1}{2}$ Nakshatras from the time of
 Yudhishtira to that of the Nirvana, that would be
 more appropriately and without the use of fractions
 expressed as the movement of the Rishis,
 through 26 padas, and the period denoted thereby
 would be put down as 26 times 25 or 650 years.*
 And when it is remembered that this interpretation
 yields for the time of Yudhishtira a date $(650 + 543$

* It is also possible that the sloka as composed by
 Garga might have conveyed this meaning more explicitly,
 and that the sloka as known to us might only be a
 paraphrase thereof by Varahamihira.

or 1193 B.C.) almost the same as what (1190 B.C.) we infer from the tradition of the first century A.D. reported in the *Rajatarangini*, it will become apparent that not only was the interpretation given above the one intended by the author of the sloka, but that it continued to be the only interpretation even as late as the last quarter of the first century A.D.

But the expression "*Shaddwikapanchadwi*" so long * in India been interpreted very differently. It has been interpreted as meaning 2526 and this interpretation is very natural to one who does not hold the clue to the labyrinth of Indian chronology. I maintain that it was this interpretation that is one of the main causes of the addition of two thousand years in the *Vishnu Purana*. For the author of the verse was Garga who lived in the second century B.C., and the only authority with reference to chronology remembered and noted by Varahamihira (who lived in the sixth century A.D.) is this verse of Garga. During this long and troublous interval of six centuries and more, the only guiding point of chronology seems to have been this tiny verse, which

* See *Rajatarangini*, l. 51. Also please in Dr. Stein's Edition, p. 4.

was rightly understood certainly till the second century after Christ. When once the expression, "Shrudhwika Panchadwi" was understood as signifying a period of 2526 years and the epoch of Yudhishtira was placed 2526 years before the date of the Nirvana of Buddha, which, it may again be stated, had been from the second century B. C. onwards supposed to have taken place in 544-3 B. C.,* it is easy to see how the beginning of the Kali Yuga came to be placed about $2526 + 544$, or 3070 B. C. And whatever might have been the meaning intended by Garga, there can be little doubt that about the fifth century after Christ the sloka was interpreted to mean that Yudhishtira lived about 3070 B. C. I have already shown that the knowledge of consecutive chronology was at a discount after the extinction of the Andhras in the third century A. D. It was probably in this or in the next century that the new interpretation of Garga's sloka was given and acted upon. The new interpretation might not have been ventured before the extinction of the Andhras, for the Andhra dynasty terminated according to the Vishnu $1015 + 850$ or only

* See *The Chronology of Ancient India*, Y. B. p. 76.

1865 years after the Mahabharata War, whereas the new interpretation gives a much larger figure.

The Vishnu Purana was thus induced by the chronology of the couplet to carry back the date of Kali to 3176 B. C. The Purana would indeed have adopted the exact epoch furnished by the sloka of Garga, *i e* , 3070 B. C. But the current year of the era then prevailing, which commenced only in 1176 B. C., was a hard fact, not to be meddled with by a chronicler how-ever holy. It was only to suit the current calculations that our Pauranika adroitly put back the epoch of the current era by an exact period of twenty centuries. This would not on the one hand interfere with the calculations of the Almanacs, as in them the figures for the thousands were, as we have already seen, left out.*

Another reason for this putting back of the

* It is curious that if the period for the Kalinkilas, one of the 'contemporary' dynasties, be left out of account, the total period for all the dynasties up to the date of the chronicler (485 A. D.) comes to 3555 years, which therefore take us to 3070 B. C. for the epoch of Yuga-hatira, a result which exactly coincides with that arrived at by the new interpretation of Garga's sloka.

date of the beginning of the Kali era suggests itself on a study of the Puranas. The Vishnu Purana says: (IV. 24)

सप्तर्षीणान्तु यौ पूर्वा दृश्येते उदये दिशि ।

तयोस्तु मध्ये नक्षत्रं दृश्यते यत्समं निशि ॥ २४ ॥

तेन सप्तर्षयो युक्तास्तिष्ठन्त्यब्दशतं नृणां ।

तेतु पारिचिते काले मघास्वासन् द्विजोत्तम ॥ २५ ॥

“Of the seven Rishis two are first perceived rising in the sky; and the asterism which is observed to be, at night, even with the middle of those two stars is that with which the Rishis are united. Thus united they remain for a hundred years of men. They were in Magha at the time of Parikshit.” This explanation of the movement of the Rishis is adopted also by the Vayu, Matsya and Bhagavata Puranas, all of which also base their chronology on this supposed motion. The meaning is rendered clear by the following process. Draw an imaginary straight line between the stars *Pulaha* and *Kratu*, i.e., between *Mirak* and *Dubhe* of the constellation of *Ursa Major*. Draw another line at right angles to, and just through the exact

middle of, the first line in the direction of the other stars of the *Ursa Major*. This second line will, if produced, meet one of the constellations of the Lunar Zodiac. This, according to the *Panra-nika*, is the constellation with which the Rishis are for the time being united. After the expiry of one hundred years the line will, according to him, meet the next constellation, and so on until the Rishis will make a round of the Nakshatras in twenty-seven hundred years. I ask my reader to make the observation for himself, which he can easily do in any starlit night in the month of July. He may also verify his observation with the aid of a star-globe. He will find that this second line above referred to will pass by Atri and Marichi (*Megrez* and *Benetnasch* of the constellation of *Ursa Major*) and, going just East of Alphecca and Marsic, will meet the Purvashadha Nakshatra (Eta, Epsilon, Gamma and Delta, Sagittarius). Now scientific Astronomy tells us that this line, which we shall now call the line of the Saptarishis, could not have pointed for the last some thousands of years to any other Nakshatra, as these fixed stars are relatively to one another situated in the same directions, in spite of what are called their *proper motions* which may be safely left out of account.

Thus we may consider that this throwing back of the date of Kali by two thousand years was one of the offshoots of the period of confusion that intervened between the Andhrabhrityas and the 'contemporary' princes of the Vishnu Purana. It is a striking coincidence that it was only about this epoch in the history of India, that the period for the Kali Yuga was increased * from 1200 ordinary to 1200 divine years. Surely there never was, in the annals of Hindustan, a period more congenial to the development of notions opposed to correct ideas of ancient Hindu chronology. This was the time of the Hindu revival and of the beginning of the decline and fall of Buddhism in India. Professor Rhys Davids draws † prominent attention to the circumstance that for the four centuries ending with 100 A.D. "no Brahman temple, no Brahman God, no sacrifice or ritualistic act of any kind is ever, even once, referred to" in the inscriptions, which however record a number of gifts "by kings, princes, merchants, and ordinary householders. And whereas the later inscriptions, favouring the Brahmans and their special sacri-

* See the *Chronology of Ancient India, First Series*, p. 135.

† *Buddhist India*, p. 157.

tees, are in Sanskrit, these earlier ones, in which they are not mentioned, are in a sort of Pali." This marked distinction in the inscriptions of the two periods—both as to the object of the gifts they record, and as to the language in which they are written—leads Dr. Bhandarkar to the following conclusion:—"From about the middle of the third century before Christ to about the end of the third after, Buddhism was the favourite religion of the masses. During that time Brahmanic literary and religious activity was a good deal impaired. In the fourth century Buddhism declined and there was a Brahmanic revival; and the Brahmins re-edited some of the books on the religious and the civil law.... The old Puranas were also recast about this period and a good many new ones written."* In this period of wide national upheaval when Brahmanism again asserted itself and gained supremacy in popular estimation over the dying creed of Lord Buddha, there was a stock-taking, as it were, of old beliefs and sentiments and whatever was unsuited to the requirements of the age was discarded and new creeds and methods of worship slowly introduced. In

* Indian Social Reform. v. 2. J. Bom. R. A. S. for 1901.

CHAPTER II.

THE CHRONOLOGY OF THE SIDDHANTAS.

WE have seen that the chronological portion of the Vishnu Purana reaches down to the latter half of the fifth century after Christ, and that it makes the Kaliyuga begin in 3176 B.C., that is, exactly two thousand years before the date given for that epoch till down to the third century after the Christian era. We have no means of knowing whether this date was ever adopted as a general epoch in India; but a discussion of this topic is not absolutely indispensable to our purpose, which is to discover whether there is any intermediate link in the history of Indian chronology between the two periods which respectively assigned 1176 B.C. and 3102 B.C. for the beginning of the Kali era. For such a link is supplied not only in the epoch we found adopted in the Vishnu Purana, but also and more satisfactorily, in that afforded by the era prevalent in Kashmir and known variously as Saptarshaya, Lankikshla, or Pahari era.

In the Puranas the Saptarshis, the seven stars of the *Ursa Major*, are said to move through the twenty-seven Nakshatras of the Lunar Zodiac at the rate of one hundred years in each Nakshatra and to have been in the Magha Nakshatra at the time of the Mahabharata War. In fact, we find that in the ancient works of India, wherever chronology is mentioned, the motion of the Saptarshi is also referred to, a circumstance which leads us to suppose that the chronologists of the day computed time by reference to this era. Thus does Garga refer to it when speaking of the dates of Yudhishtira and Sakyamuni, and thus does Varahamihira, who devotes a whole chapter in the Brihat Samhita to the motion of this constellation. The Puranas mention it when they fix the date of the Nanda dynasty and both Rajatarangini and local tradition ascribe the origin of this era to the epoch of King Yudhishtira. According to this method of calculation, the years were counted up to one hundred, and then, instead of numerals being used to denote the hundreds, every period of one hundred years was denoted by a Nakshatra counted from Magha. The old system of counting by Nakshatras ceased even before the days of Abu Rihan Albiruni (973—1048 A.D.),

who says in his book on India, "Common people in India date by the years of a *centennium*, which they call *Samvatsera*. If a *centennium* is finished, they drop it and simply begin to date by a new one. This era is called *Lokakala*, i.e., the era of the nation at large." Kallhava (1148 A.D.) tells us (I. 52) that he wrote his *Rajatarangini* in the year 1070 of the Saka era corresponding to the year "24 of the *Laukikakala*," in other words, the year 4224 of the Kashmir Saptarshi era. Mr. V. A. Smith says (J. R. A. S. January, 1903) that "the Praxasti inscriptions at Bijurth in the Kangra District equate the dates Saka 726 and *Laukika* 80, i.e., 3680 equivalent to 804.5 A. D. These inscriptions are the earliest hitherto recognised as being dated in the *Laukika* era. * * * The evidence that has been cited leaves no doubt that the use of the ancient *Laukika* era was once widely diffused in Northern India." On formal occasions and documents, the date is even now said to be thus written down, "*Saptarshi charanamatera Samrat 4972, Thathacha Samrat 4972, Thathacha Samrat 72*," i.e., "the year 4972 in accordance with the motion of the Saptarshi and thus the year 72." Thus we need not hesitate to recognise in the Kashmir era, the old Saptarshi-

kali of the Puranas, which commenced, like the Kaliyuga, with the epoch of Yudhishtira, and to conclude that from the earliest times the practice with reference to it has been to omit in calculation the numerals representing the hundreds and thousands.

This latter peculiarity facilitated the throwing back of the beginning of the Saptarshi era from 1176 B.C., the original epoch of the Kaliyuga to 3076 B.C., the epoch of the modern Kashmir era. The reasons for the change are almost the same as those detailed in the last chapter in connection with the chronology of the Puranas. For both the dates 3176 B.C. and 3076 B.C., adopted respectively by the Vishnu Purana and the Kashmir era for the epoch of Yudhishtira, have been brought about by the same interpretation of Garga's verse, namely, that Yudhishtira reigned 2,526 years before the epoch of Buddha's Nirvana (544 B.C.),* or about 3070 B.C. If, as we found in the 1st chapter, the Vishnu Purana adopted 3176 B.C. for the commencement in order to throw it back by an exact period

* This date is not correct but was then commonly accepted.

of 2,000 years, the Saptarshikala began at 3076 B.C. for the reason that this date more nearly accorded with the interpretation mentioned above, the difference of only six years† having been rendered necessary to bring it in harmony with the unit figure of the current Yudhishtira era. This wrong interpretation of the couplet which served as the *memoria technica* of current chronology was, for the first time, given about the fourth century after Christ, which we found in the last chapter to have been a period of disturbing foreign invasions and of transition in Hindu society, when there was no paramount power in India of such influence and recognised authority as to keep up the continuity in dynastic chronology. As has been shown in the last chapter, another reason which necessitated the throwing back of the date of Kali by the large period of 1,900 or 2,000 years, was the evident desire to reconcile the theory of the traditionally

† This difference of six years between the Kashmir epoch and that of the couplet, might have been also accounted for by reason of the era having been called after the name of Yudhishtira, between the dates of whose accession and abdication there had intervened a period of not less than sixteen years.

accepted "motion of the Saptarshis" with the observations, which must then have been made, of the Nakshatras, Mula or Purvashada, to which the Saptarshis pointed.

Thus, instead of 1176 B.C., the original date for the beginning of the Kaliyuga which even now prevails in Malabar under the name of Kollam Andu, having probably been introduced there by the colonising Brahmans in the days of the early Kadambas of the second century A.D., the Vishnu Purana and the Kashmira came to adopt 3176 B.C. and 3076 B.C. respectively for the epoch. We shall also find how a great astronomer writing in 499 after Christ came to fix for it 3102 B.C., so as to suit his astronomical requirements.

Eighteen different Siddhantas or works on astronomy are said to have existed once in India, but only a few of them are known now to exist. We have already dealt with the Vedanga Jyotisha and Gaiga Samhita. Five other Siddhantas are summarised in Pancha Siddhantika, the famous work of Varahamihira written about the middle of the sixth century after Christ, namely, the Brahma or Paithamaha, the Samia, the Vasi-

shthā, the Romaka and the Paulisa. Says Dr. Thibaut in his Introduction to the Pancha-siddhantika : "The Pithamaha Siddhanta known to Varahamihira represents Hindu astronomy as yet unaffected by Greek influence and thus belongs to the same category as the Jyotisha Vedanga, the Garga Samhita, the Surya Prājñapti and similar works. From what Varahamihira says about its contents, we might almost identify it with the Jyotisha Vedanga," the yuga on which the calculations of both are based being the quinquennial period, the beginning of which is marked by a conjunction of the Sun and the Moon at the first point of the Nakshatra Dhanishtha. This Pithamaha Siddhanta is different from another of the same name forming part of the Vishnu Dharmottara Purana, and also from the Sphuta Brahma Siddhanta by Brahmagupta, and another Brahma Siddhanta known ordinarily as Sakalya Siddhanta. The Romaka is, as its name implies, chiefly based on the astronomical learning of the West, and as it does not contain, as stated by Brahmagupta in his Sphuta Siddhanta, the orthodox yugas, manwantaras and kalpas, it is outside the pale of orthodox smṛitis. The year of the Romaka is

down to seconds the tropical year of Hipparchus and Ptolemy. The Paulisa Siddhanta is stated by Alberuni to have been the work of Paulese, the Greek, and it does not base its calculations on any cyclic period. Its processes, as described in the Pancha Siddhantika, are of a rough nature and less accurate than those in the Romaka and Surya Siddhantas. Dr. Thibaut thinks it highly probable that the Paulisa and Romaka Siddhantas were the earliest Sanskrit works in which the new knowledge imported from the West was embodied. "Taken together," says Dr. Thibaut in the Introduction, "the five Siddhantas appear to enable us to form a fairly accurate notion of the transition of old Indian astronomy into its modern scientific form. The Paitamaha is the representative of the pre-scientific stage of astronomical knowledge; the other sources for which are the Jyotisha Vedanga, the Garga Samhita, the astronomical books of the Jainas and a number of quotations from various old authors, as for instance, Parāśara. During that period, nothing of importance seems to have been elaborated but the doctrine of the quinquennial luni-solar yuga. The authors of all the works mentioned share the same essential characteristics, in so far as displaying a very imperfect

knowledge of the mean motions of the Sun and Moon (and, some of them, of the planets also), and connected therewith of the length of the years and months, being altogether unacquainted with true motion as distinguished from the mean, teaching an equal daily increase or decrease of the length of the day; dividing the sphere into twenty-seven or twenty-eight Nakshatras. * * They all moreover, with the exception of the Jaina books, agree in fixing the winter solstice at the beginning of the Nakshatra Dhanishtha." "The Vasishtia Siddhanta marks the transition from the old purely indigenous systems to those works which were constructed altogether on the basis of Greek science." But of the five Siddhantas, says Varahamihira (verse 4), "the Siddhanta made by Paulisa is accurate; near to it stands the Siddhanta proclaimed by Romaka; more accurate is the Saura; the two remaining ones are far from the truth." In the Surya Siddhanta modern Hindu astronomy has assumed the type which it has still preserved. It fully "adopts the traditional kalpa and yuga system to which it adapts the length of the revolutions of Sun, Moon and the planets to obtain integral numbers of them all during the kalpa or yuga."

We next come to Aryabhata, "the oldest of scientific modern astronomers," who composed in 499 A. D. the *Aryabhatiyam*. Brahmagupta wrote his *Brahma Sphuta Siddhanta* in 628 A. D., and Bhaskara Charya completed his *Siddhanta Siromani* in 1150 A. D. We next find a host of other astronomical treatises, chiefly what are called *Karanagranthas*. The *Surya Siddhanta* that we are now acquainted with, agrees in its fundamental features with the *Surya Siddhanta* known to Aryabhata and Varahamihira and summarised in the *Pancha Siddhantika*. Dr. Kern states (*Brihat Samhita*, p. 46) that it will be difficult to avoid the conclusion that the *Surya Siddhanta*, in its present form, is a lineal and legitimate descendant of that known to Varahamihira. "At the same time," says Dr. Thibaut, "we cannot fail to notice that in certain points the teaching of the old *Surya Siddhanta* must have differed from the corresponding doctrines of its modern representative," for example, in regard to the mean values of the diameters of the Sun

bhata and the modern Surya Siddhanta is given below for convenience of reference.

Names of Planets, etc.	Number of revolutions in a Mahayuga, according to Aryabhata, Dasagitika, (1 and 2).	Number of revolutions in a Mahayuga, according to the modern Surya Siddhanta. (I. 20-47).
Sun, Mercury, Venus and Sighrochhas of Mars, Saturn and Jupiter	4,320,000	4,320,000
Sighrochha of Mercury	17,937.02	17,937.030
Sighrochha of Venus	7,022.38	7,022.376
Mars	2,296.824	2,296.832
Jupiter	364.224	364.220
Saturn	146.564	146.56
Moon	57,753.336	57,753.336
Moon's Ascending Node	232.226	232.23
Moon's Apogee	488.219	488.211
Sidereal Revolutions	1,582,237,500	1,582,237,828

Aryabhata was the first in India to enunciate the theory that the earth moved on its axis. (Dasagitika, I; Aryashtasata, III: 9). But, in spite of this discovery, he still retained the old order of planets, also adopted in the Surya Siddhanta. (Aryashtasata, I. 1; II. 13-16). Says he in the Aryashtasata (II. 15): "Below the starry region are Saturn, Jupiter, Mars, the Sun, Venus

Mercury and then the Moon, one below the other. Below these all, and in the midst of heavens, is the earth forming a spike, as it were, to the others.' He also adopts the old theory that the Sun revolves round the earth. (*Disagitika* 1 & 2 ; *Aryashtasata*, II, 5 & 13-16 ; III. 2). Mr. S. Sthanu Pillai contends (*Indian Review*, July, 1905) that Aryabhata discarded the geocentric theory and formulated the heliocentric system and bases his arguments on the second and sixth verses of the *Golapadi*, neither of which, it is submitted, can be interpreted in any reasonable manner to support his contentions.

The history of Hindu Astronomy is thus summarised by Ganesa in his commentary on the *Surya Siddhanta* :—"The planets were right in their computed places in the time of Brahmacarya, Vasishtha, Kapaya and others, by the rules they gave. But by length of time they differed, after which at the youth of the Krita age, the Sun revealed to Maya a computation of their true places. The rules then received answered during the Treta and Dwapara yugas, as also did other rules framed by the Munis during those periods. In the beginning of the Kaliyuga, Pansara's work answered ; but Aryabhata, many

years after, having examined the heavens, found some deviation and introduced a correction of Bija. After him, when further deviations were observed, Durgasinha, Mihira and others made corrections. After them, the son of Jishnu, Brahmagupta, made certain corrections. After them, Kesava settled the places of the planets; and sixty years after Kesava, his son Ganesa made corrections." (*Asiatic Researches*, II. 243). Of course, the first part of the quotation is absolutely useless for historical purposes; but the latter half shows the constant desire of Hindu astronomers to verify and correct older astronomical theories by means of actual observations. It may also be observed that the *Surya Siddhanta*, as known to us, far from having been revealed in the *Kritayuga*, is of a later date than *Aryabhata* and *Varahamihira*, the former of whom wrote his famous work in 499 A.D. and the latter died, as stated by *Amaraja*, in 587 A.D. (*Dr. Thibaut's Pancha Siddhantika*, p. xxx).

Dr. Kern thinks that it would be extremely rash to reduce from the scanty details we have concerning the five standard works of Hindu Astronomy any inference as to the probable

period of their first composition. As an hypothesis, he roughly dates the beginning of the Siddhanta period at 250 A.D., about half way between Garga and Varahamihira (*Brihat Samhita*, p. 50). On the other hand, in the opinion of Dr. Thibaut, the Romaka and Paulisa Siddhantas must have been composed not later than about 400 A.D. (Dr. Thibaut's *Pancha Siddhantika*, p. lx).

The writings of Aryabhata and the later astronomers disclose the theory that the Sun, Moon and the planets are seen together at the beginning of the Aswini Nakshatra in the beginning of every kalpa. This idea is thus explained by Bhaskara-charya in the *Siddhanta Siromani* :—"Here at the centre of the earth one end of a string is supposed to be tied and the other end of it is tied to the star-circle (in the plane of the ecliptic) at the commencement of the constellation Aswini. In the beginning of creation Brahma placed the Moon and the other planets like beads attached

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the year, the yuga, etc., took place simultaneously." Kamalakara Bhattacharya says on the authority of the Vishnu Dharmottara Purana in his Siddhanta Tatwa Viveka :—" When, at midnight at Lanka, the planets, their apogees and nodes, all set in motion, happen to be at the same time in conjunction at the beginning of Aries in the plane of the ecliptic, then they say the time known as *srishti*, creation, occurs. The good declare that the time by which the same conjunction takes place again is a *Srishti Kalpa*." (See Mr. Rangacharya's Yugas, pp. 11-12). Says Aryabhata (Aryabhatasata, II. 11): "The yuga, year, month, day, all began together at the beginning of the white fortnight of the Chitra month," and he says also that the (Maha) yuga commenced on Wednesday when the Sun was rising in the sign Aries at Lanka (Dasagitika 2). The reasons underlying this astronomical theory of planets beginning their revolutions together at the first point of Aswini in the beginning of creation are not far to seek. In the first place it is usual for astronomers in India to teach the motions and the positions of the planets at a given time by means of short verses or rules giving the number of revolutions of each planet for a big cycle of years.

They were meant to enable students of astronomy to readily make any astronomical calculations. Thus we find in the Romaka Siddhanta "the yuga of the Sun and the Moon," which is a cycle of 2,850 years, consisting of 19×150 solar, and 235×150 synodical lunar months. This yuga is thus evidently based on the period named after the Athenian Meton (430 B.C.), whose 150th multiple is employed by our author to enable him to form a cycle comprising integral numbers of solar years, lunar months and natural days. Similarly there was widely prevalent in Southern India a cycle of 90 years known as the Grahaparivriti, referred to in Vararuchi's Vakyakarana. This cycle was analysed by the Portuguese Missionary Beschi, while resident for forty years in Madura and was found to be "constructed of the sum of the products in days of 15 revolutions of Mars, 22 of Mercury, 11 of Jupiter, 5 of Venus, 29 of Saturn, and one of the Sun. The epoch of this cycle occurs on the expiration of the 3078th year of Kaliyuga, in 24 B. C." (Prinsep's Indian Antiquities and Useful Tables, by E. Thomas, vol. II, p. 158). In the Vedic times the quinquennial cycle served a similar purpose and consisted of sixty solar months, sixty-two synodical months and sixty-seven sidereal

revolutions of the Moon. Equally useful was the famous sixty-year cycle which is named after the planet Jupiter, for it crudely represents the period of five of his complete revolutions and probably was considered to be the period taken by the Sun, Moon and Jupiter (and possibly also Saturn, Mars, and the inferior planets) to come to nearly the same position in the heavens. Coming to more modern times, we find a certain number of revolutions is given for each planet for a Mahayuga in the Dasagitika of Aryabhata and in the Surya Siddhanta, and for a Kalpa in the Siddhanta Siromani. The bigger the cycle, the more correct would be the figures for complete revolutions of the planets, and when the durations of the yugas were increased 360 fold about the third century after Christ (see *Chronology of Ancient India*, p. 137), they were utilised by astronomers to convey a knowledge of astronomical elements with greater accuracy.

The transition from the stage of assigning certain complete revolutions for each planet in every Mahayuga or Kalpa to the stage of supposing that these planets began their revolutions together at the beginning of every such æon is easy to understand. What was merely an astro-

nomical formula might easily have been considered an historical occurrence, and the planets supposed to have begun their motions at the Great Creation and collapsed at the Universal Deluge, in both cases simultaneously. It was by no means an unnatural supposition that at the creation all the planets should be considered to have been launched forth from one point in the heavens and left to perform their revolutions in harmony and order. The idea of a special creation was as much prevalent in India as elsewhere, according to which notion the Sun, Moon and the Stars all rose up in the sky on a sudden at the command of God (cf. Genesis I. 16-18), and consequently began their courses simultaneously. As mythology posited a series of creations and corresponding dissolutions, the inference was plain that the planets started on their courses together at the creations and came back together at the dissolutions and this process was supposed to be repeated without intermission in the eternity of Time. Says the venerable Rig Veda (X. 190, 3. Quoted also in the *Yagniki Upanishad*): "Brahma, the Creator, established the Sun and the Moon, the Earth and the Heavens as before." The words 'as before,' यथापूर्वं, show the

old belief in a number of such previous creations. The Mahabharata tells us that "Creation originates thus repeatedly at the beginning of every cycle, Creation and Destruction succeed each other like sunrise and sunset in this world. Then, Time gifted with great energy, forcibly brings back the Sun after his disappearance." (Santiparva, 340.73-4.) We are also told that the idea of a great cosmical year at the close of which the heavenly bodies return to their original stations occurs in Plato and Cicero (Lewis's *Historical Survey of Ancient Astronomy*, p. 213 *et seq.*) and is repeated by many subsequent authors, and Plato and Cicero believed in the renewal of the world after each æon. Moreover, so far as the Sun, Moon and Jupiter were concerned, there was already the traditional belief current in India, quoted as such in the Vishnu Purana (IV.24.20) and referred to also in the Mahabharata (Vanaparva, 190. 90-1) and the Vayu Purana (II. 37.407), to the effect that "when the Sun and Moon and Jupiter are together in Pushya Nakshatra, then the Kritayuga (the first in the next Mahayuga) commences." Probably also the astrological supposition influenced the popular mind to some extent, according to which the presence

śiṭha and other Sastias, this deduction is required to be made from the kalpa because at the end of that term the planetary motion commenced. The son of Jishnu who understood the four Vedas and Bhaskaracharya considered these motions as commencing with the kalpa.*** Brahmagupta's rules are consistent with the practice of the Pandits, his predecessors; and he formed them from the Purana Vishnu Dharmottara, wherein is contained the Brahma Siddhanta; and the periods given by Aryabhata are derived from Parasara Siddhanta. The precepts of the Munis are, therefore, the authorities of Brahmagupta, Aryabhata and Bhaskaracharya, whose rules cannot be deceitful.*** If a planet's place, computed both by the Surya Siddhanta and Parasara Siddhanta, should be found to differ, which rule must be received as right? I answer that which agrees with its place by observation; and the Munis give the same direction" (See Rangacharya's Yugas, p. 16). In this connection, it may be noticed that while these different authorities "vary considerably in the number of revolutions which they prescribe during the æon, yet manage all of them to leave the same old remainder of a revolution which determine the present position. Thus, for

example, the revolutions of Jupiter's, Apseides since the beginning of the present æon have been, according to four different treatises, 407, 309, 378, and 448 respectively; but the remaining fragment varies in them all only between the limits 171° and $172\frac{1}{2}^{\circ}$; and it gives a position swerving less than 3° from the true one." (Whitney's *Oriental and Linguistic Studies*, Second Series, p. 367). The differences pointed out above by the commentator of the *Surya Siddhanta* only goes to show that when each astronomer began to apply his latest corrected elements to the observed positions of the planets, each arrived at a different date for the grand conjunction of the planets at the beginning of a kalpa. It also shows that the original system of the yugas and kalpas were not based on astronomical theories. It may also be added that it was only about the third century of the Christian era that the periods for the Mahayuga and Kalpa were increased 360 times for reasons stated in the *Chronology of Ancient India*, 1st series, pp. 136-7, and it is, therefore, evident that these differences and the astronomical theory underlying them could only have been brought about after the third century.

Nor did any astronomical theory originally underlie the current belief that we are now passing through the Kali age of the 28th Mahayuga of the Vaivasvata Manwantara, the 7th of the 14 Manwantaras of the present Sweta Varaha Kalpa, the first of the kalpas in the latter half of the age of the First Brahma, son of Vishnu the Eternal. (*Surya Siddhanta*, I. 20-21; *Vishnu Purana*, I. iii. 28). This idea is constantly brought to mind by the Sankalpa, the words of determination, which preface every religious act done by the Hindus. The name of the present kalpa and its place in the lifetime of Brahma are based on Hindu mythology. The Varaha, or Boar, incarnation is referred to even in Vedic works, for example, in *Taittiriya Samhitā* (VII. 1. 5. 1), *Taittiriya Brahmana* (I. 1. 3. 5), and *Satapatha Brahmana* (XIV. 1. 2. 11). Brahma is supposed naturally to be in the middle of his life. As regards the Manwantara periods, their beginnings, even according to the *Siddhantas*, have no astronomical significance. Moreover, while according to the *Siddhantas* there are said to exist 14 Manus in a Kalpa, each for a period of 71 Mahayugas, we find only seven Manus enumerated in *Manu-smṛiti* (I. 36 and 61-63), a work of between 200 B. C. and

200 A. D. according to Buhler, though curiously enough the same period is allotted by it for each Manwantara (I. 72 and 79). The idea, according to the Manusmriti, seems to be that the seven Manus finish their Manwantara cycles each of the period of 71 Mahayugas twice over in a Kalpa. Says Dr. E. W. Hopkins in an article on Epic Chronology in the 24th volume of the *American Oriental Society's Journal*, p. 46 : " The Manwantara theory may well be implied here, Mahabharata XII. 225-31, for though foreign to the early epic the Manwantaras not only in their earlier form but even in their later fourteen-Manu form; are known to the pseudo-epic.*** The first group of Manus is implied " in Santiparva, chapters 284, 337, 343, 349 and 350. "Finally a Manu of the second group (of seven) appears in XIII. 18. 43." Thus the evidence of these authorities coupled with the circumstance that the names of the first five of the future seven Manus (*Yishnu Purana* III. 1) end suspiciously in the same name of Savarni and that those of the last two are peculiar and all bear the impress of later addition, leads us to the conclusion that the earlier number of Manus was only seven and that the astronomical theory which implies the existence

of fourteen Manus is only of later origin. Much less could the Manwantaras be considered to possess any astronomical meaning at a time when, as is recorded by the Bhagavad-Gita (X. 6) whose date is fixed by Teling to be anterior to the 3rd century B. C., only four Manus were considered to have existed. Nor is the statement about the present being the 28th Mahayuga based on any astronomical calculation. In the Mahabharata (XII. 349), Manwantaras are called Kalpas and only seven creations and cycles are mentioned, the fourth of which is connected with Swarochisha Manu and the seventh with Vaisvaswatha Manu, and only one series of the four yugas of Krita, Treta, Dwapara and Kali is mentioned with reference to each creation. Thus here it is stated, "In the Krita age (of the fourth creation) the religion of Sattwa existed.* * * Brahman instructed Swarochisha Manu in it.* * * When upon the expiration of the Krita age, the Treta came, that religion, once more disappeared from the world." "(In the fifth creation) Prajapati obtained this religion from Sanatkumara in the Krita age." "In the seventh birth of Brahman, Narayana preached it to Brahman.* * * In the beginning of the Tretayuga, Vivaswat gave it to

Manu." Thus it is clearly intended that there have been hitherto only seven sets of the four yugas of Krita, Treta, Dwapara and Kali, or 28 yugas in all. It is, therefore, probable that the idea of 28 elapsed Mahayugas has originated in the belief of the present Kaliyuga being the 28th yuga since the beginning of the first creation of Swayambhuva Manu. Moreover, the idea of 28 elapsed yugas seems to have been an old notion reaching up to the times of the Mahabharata War, due to the chronology of the Vedic period as will be explained in a later chapter, and the number could never have been the result of calculations rendered necessary by the astronomical running-race theory. As a matter of fact, neither the Vedas nor the Mahabharata, neither the Manusmriti nor the comparatively late Vishnu Purana, refers to the explanations of later astronomers regarding the yuga systems.

To resume the thread of the main subject of our enquiry, the different explanations given by Aryabhata and Surya Siddhanta, which are referred to above, are both intended to serve one common purpose, namely, to enable calculations to be made from the beginning of the Kaliyuga. As the number of revolutions of

each of the planets according to Aryabhata is divisible by four, the planets assume the same position at the beginning of every one of the four equal yugapadas, and consequently at the beginning of every Mahayuga and Kalpa. But as according to the Surya Siddhanta, the smaller yugas are respectively $\frac{1}{16}$ th, $\frac{3}{16}$ th, $\frac{9}{16}$ th and $\frac{15}{16}$ th the duration of a Mahayuga and as the number of revolutions therefor is not divisible by 16, but by 4 only, it is easy to understand why it states (I. 57) that "at the end of this Krita-yuga the mean places of all the planets except their nodes and apogees coincide with one another in the first point of the stellar Aries. The planets are considered by it to have been together only at the beginning of the Treta and Kali yugas, but not at the beginning of the Mahayuga, and a period of 47,400 divine years or 3.95 Mahayugas had to be supposed to have elapsed after the beginning of the Kalpa for the planets to begin their race. Nothing is more plausible than to suppose that some time is necessary for the arduous task of creation at the beginning of every æon. As according to it 3.95 Mahayugas had elapsed after the commencement of the Kalpa before the

planets started on their courses and as it also implies that 456·7 Mahayugas intervened between the beginning of the Kalpa and the current Kaliyuga, a period of 452·75 Mahayugas represent the time elapsed before the beginning of the Kaliyuga since the grand conjunction of the heavenly bodies, which is the exact period that one would arrive at independently by calculations based on the elements of the Surya Siddhanta.

Thus both these authorities base their calculations on the supposition that a minor conjunction of these heavenly bodies took place at the beginning of the Kaliyuga. So far as the Surya Siddhanta is concerned, it does not explicitly specify the exact epoch, for the obvious reason that it supposes itself to have been vouchsafed to mankind at the end of the Kritayuga. But the calculations of all astronomers and almanac-makers who follow the Surya Siddhanta are based on the supposition that the epoch of the Kaliyuga, according to this Siddhanta, is 3102 B. C. Says Mr. Sewell in *The Indian Calendar* (p. 6): "According to the Surya Siddhanta Kali began on midnight of Thursday, 17-18th February, 3102 B. C. Old style." We shall also find that the

same date is adopted by the earlier authority, Aryabhata, the father of modern Hindu Astronomy.

He tells us in the *Aryashtasata* (II. 10) that he composed that work at Kusumapura "in his twenty-third year, when sixty sixty-year periods and three Yugapadas had elapsed," that is to say, he makes his 24th year correspond to the 3601st year of the Kaliyuga. This epoch corresponds, as Lallacharya implies in his *Dhivriddhida Tantra* and Paramadisiwara states in his commentary on the *Aryashtasata*, to the year 421 of the Saka (Salivahana) era (499 A. D.). Thus it is clear that the epoch of the Kaliyuga, according to Aryabhata, is 3102 B. C. and he tells us clearly that it began on a Thursday (*Dasagitika* 3). It has been calculated that the two epochs, according to Aryabhata, are the midnight of Thursday—Friday, 17—18th February, 3102 B. C. and Friday, March 19th, 499 A. D.

Now we have to see whether it was Aryabhata or any other before him that first introduced the year 3102 B. C. as the epoch of the Kaliyuga. We have seen that till about the third century A. D. 1176 B. C. was assigned for that epoch and that in the fourth and fifth centuries of the Christ-

ian era the Kaliyuga was supposed to have begun by some in 3076 B. C., and by the Vishnu Purana in 3176 B. C. As the date of at least the chronological portion of the latter is, as has been ascertained in the last chapter, 485 A. D. and we also know that none of the astronomical treatises of an earlier date than Aryabhata refer to 3102 B. C. as the epoch of the Kaliyuga, therefore, it is very probable that Aryabhata who was born in 476 B. C. was the first to introduce the epoch. This is rendered almost certain by the fact that the epoch of Kali is exactly 3,600 years before the date of his work and observations, which lead to 3102 B. C. if his elements are applied thereto. Born in a period when India was passing through a stage of transitional crisis, carried by the current of the literary and scientific spirit of the age and gifted with rare attainments alike in composition as in the field of higher Mathematics and Astronomy, he was led to harmonize tradition with science and to explain the old in the light of the new. In the first place he was aware that 3076 or 3176 B. C. was the date generally assigned for the beginning of the Kaliyuga. He adopted a date midway between these two, which had the additional merit of being the

epoch when according to the elements propounded by him and widely accepted at the time, a minor conjunction of the heavenly bodies could be said to have taken place. Says Bentley in his *Historical view of Hindu Astronomy* (p. 85): "The point of time thus fixed on was found by computation made backwards, which showed that the planets were then approaching to a mean conjunction in the beginning of the sidereal sphere commencing with the lunar asterism Aswini; on which account it was made choice of as the point to proceed from."** For whatever errors there might be in such an assumption, the same being divided among the years elapsed when the system was framed, would appear so small as not to be worth notice." It may be stated again that every yuga is supposed by astrology to be preceded by a cataclysm, small or great according to the nature and importance of the particular yuga, and this is supposed to be indicated by the presence of a number of planets together in the sky. As the Kaliyuga was heralded by the disastrous Mahabharata War, the popular mind would have fancied the commencement to have been indicated by one of these planetary conjunctions; and

astrologers could have, if required, supported themselves with authority from the epic itself, wherein it is stated that at the commencement of the war "the seven great planets rose up together in the sky with dazzling brilliance." (Bhishma Parva, 17.2).

It is not to be supposed, that by fixing the epoch at 3102 B.C. Aryabhata intended to change the current era beginning either in 3176 or 3076 B. C. ; he merely maintained that if the planets were together at the first point of Aries at the beginning of the current Yuga-pada, that could have been possible only at the epoch he fixed for the beginning of Kaliyuga. The current era, beginning at 3076 or 3176 B.C., might be used popularly for purposes of ordinary use, but his epoch was intended as a valuable and easy means to find out by calculation alone the positions of the planets for any given point of time. His disciple Lallacharya makes use of it for this very purpose and the modern Surya Siddhanta tacitly, as observed before, adopts it with the same object in view. The epoch recognised in such standard authorities as the Aryabhatasata, Dhivriddhida Tantra and the Surya Siddhanta, must have been adopted by later astronomers at

least for the sake of its simplifying the calculations. If Varahamihira, the Tycho Brahe of Indian Astronomy, does not refer to this epoch, it is because he was almost a contemporary rival of the Indian Copernicus Aryabhata, whom he charges with inconsistency (Pancha Siddhantika, xv. 20), and whose theory of the daily rotation of the earth on its axis he holds up to ridicule (xiii. 5-7). On the other hand, the circumstance that he ignores altogether in his three learned and exhaustive treatises the epoch of 3102 B. C., while he, at the same time, refers to the epoch of Yudhishtira (Brihat Samhita, XIII. 3) and admits that "the intercalary months, omitted lunar days, the days of the planets, the lunar and Savana days, Aries, the Sun, the Moon, the half years, the seasons, the motions of the stars, the nights, all of these begin together at the beginning of the yuga (Panch. XV. 24)," shows that the epoch of 3102 B. C. was not handed down by tradition, but was started by Aryabhata for whose heterodox theories he seems to have evinced a positive dislike. But the almanac-makers must have been immensely profited by it, as they still are, in the preparation of their annual calendars and might have greatly popularised so convenient an epoch.

Gradually as the Yudhishtira era was supplanted in India by other eras instituted or authorized by the great ruling dynasties to mark the splendour of their Imperial sway, namely, Sakya, Harsha, Vikrama, Salivahana, Gupta, Vallabhi, Chedi and others, it was forgotten by the populace and remembered only by astronomers and astrologers, who, however, preferred the epoch of 3102 B.C. to the epochs 3076 or 3176 B. C. for reasons specified above. This explanation is rendered all the more probable by the striking circumstance that in areas to which none of these State eras penetrated, the old Yudhishtira era still continues to exist, the epoch of 3076 B. C. in Kashmir and that of 1176 B. C. in Malabar. In other words, as long as and wherever the old Yudhishtira era was still in common use, no violence could be offered to its continuity and Aryabhata's epoch could not make any headway against it. But once it was replaced by any subsequent State era, the Yudhishtira era became one of secondary importance and, if any interference is made with it for astronomical purposes, that cannot affect any current reckonings. This explains how Aryabhata's epoch came to be adopted throughout the length and breadth of India, except in the isolated

provinces of Kashmir and Malabar, as the standard epoch of the Kaliyuga.

That the date 3102 B.C. was only an invented date and not an historical epoch is clear from the foregoing reasons. It was brought into existence only in 499 A.D. by Aryabhata. It may also be remarked that though according to his elements the planets could be calculated to have been at the first point of Aries at the epoch suggested by him, the more correct astronomical knowledge of the present day negatives such a possibility. For on the 18th of February 3102 B.C., only Jupiter and Mercury were in the same degree of the ecliptic; Mars and Saturn were respectively 8° and 17° distant from them. Venus, the most brilliant of the planets, was as far away as 62° from Saturn. Nor were the Sun and the Moon in the first point of the moveable Zodiac at the epoch; for the former was $3^{\circ}, 8', 4''$ distant and the latter probably $1^{\circ}-35'$. (See

Zodiac must have advanced about 50° in 3,600 years, and consequently at the epoch of the Kaliyuga must have been about 50° behind the equinox or near the star Rohini, which is said in the Surya Siddhanta to be about $49^{\circ}-30'$ distant from the first point of Aswini. On the other hand, Aryabhata places the equinox at the first point of Aswini itself. Recognising this difficulty, the Surya Siddhanta starts a theory according to which the vernal equinox is supposed to move on either side of the first point of Aswini to a distance of 27° at the rate of $54''$ a year, starting at the first point of Aswini in 3102 B.C., advancing to the Krittika Nakshatra in 1302 B.C., and coming back to the first point of Aswini in 499 A.D. Such a libration theory is, of course, a scientific impossibility, and as a matter of fact, the vernal equinox occurred at the first point of Aswini only in 499 A.D., the first time for the last nearly 26,000 years. It may be also remarked that the first of the twelve signs of the Zodiac, namely, Ram or Aries, Mesha or Aja, plays an important part in the running-race theory and the astronomical epoch, for the heavenly bodies start their races only from the first point of Aries

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and all the yugas commence with these bodies at the same celestial position. If it be remembered that the twelve signs of the Zodiac, like the seven days of the week, are not referred to in our earliest works, but were imported into India before the Christian era long after the Mahabharata War from the countries of the West, and that Aries became the first sign only some time before the beginning of the Christian era, it becomes apparent that both the theory and the epoch are the products of the fertile imagination of later Indian Astronomers and not handed down by tradition from ancient times.

"The end of Revati and the beginning of Ashvini that Hindu astronomers speak of, coincides in the opinion of some astronomers, with the star *Zeta piscium* which they identify with the Yogatara of Revati, which, however, others assert to have disappeared altogether; but according to the *Surya Siddhanta*, the longitude of the Revati Yogatara is not zero but $359^{\circ}.50''$. (Whitney's *Oriental and Linguistic Studies*, second series, p. 351). Professor Whitney thinks it intrinsically improbable that the small star *Zeta piscium* should ever have marked any important point in the sphere before the time when it actually happened to coincide with.

the vernal equinox, that is about 572 A.D. Therefore, the first point of Aswini that is referred to in the Rāmaka and Paulīka Siddhantas is used "in the same sense as the Greeks used the term the first point of Aries, namely to denote not its place in the sphere, but simply the place of the vernal equinox" in the constellation of Aswini. (Thibaut's *Pancha Siddhantika*, p. lix). Professor Whitney points out that "if we compare the longitudes assigned to the Yogataras of all the twenty-seven Nakshatras with their actual longitudes in 360 A.D., a certain uniformity of error observable in the statements of the *Surya Siddhanta* leads us to suspect that the measurements of position on which the list was established were made from the equinox situated about 1° to the east of that of A.D. 560 and hence at a time preceding the latter date by about seventy years." (Thibaut's *Pancha Siddhantika*, lviii). Whatever doubt there may be in the minds of modern Hindu almanac-makers of India as to the exact position of the first point of Aswini, there can be no doubt that in the opinion of both Aryabhata and the *Surya Siddhanta*, it denoted that point in the heavens which coincided with the vernal equinox in the year 3,600 of the Kali era or 499 A.D.

Thus arose the epoch 3102 B. C., according to which the present year (13th April 1906 to 13th April 1907) is reckoned as 5008 of Kali current. The earliest inscription reckoning by this era is at Aihole wherein it is stated: " (Now) when thirty (and) three thousand and five years besides, joined with seven hundred years have passed since the Bharata War and when fifty (and) six and five hundred years of the Saka king also have gone by in the Kali age, this stone mansion of Jinendra has been built by Ravikirti," a dependant of Satyasraya Pulakesin II of the Western Chalukyan dynasty. (*Epigraphia Indica*, vol. VI. January, 1900). The year 3735 Kali correctly corresponds to 556 of the Salivahana era and 633 A.D. For the evident reason that this Kali epoch was first brought into existence only in 499 A.D., it is impossible to find an inscription of an earlier date than 499 A.D., dated in this era.

CHAPTER III.

THE DATE OF BUDDHA.

IN the history of the world, there is no chapter of human thought and activity of greater effect on modern civilisation than that relating to the life and work of Gautama Buddha. He was born at an age when the world was in great need of earnest Teachers to divert its attention from traditional grooves of thought and religious beliefs to new spheres of ideas and moral convictions. The philosophy of the Upanishads and the Sankhya doctrines of Kapila had already made the way clear for him; but the authority, example and influence of a born spiritual selfless leader of men was required to carry on the reformation against the conservative tenets of ritual-loving Brahman orthodoxy. Indeed, but for his propaganda, the Vedanta school in India could not have attained the pre-eminence it subsequently acquired, and possibly the Western world might have been denied the privilege of the counseling gospels of the Sage of Galilee. The advent of Jesus in the West and of Sankara in the East was in a large measure rendered pos-

sible by the large-hearted sympathy and the sublime teachings of the highest and the most beneficent personality in the history of thought. He it was that zealously preached the benign counsel of Love and Service, a doctrine till then but imperfectly understood, but which, carried by a band of earnest missionaries to the extreme confines of the then known world, was destined, in the 'march-of events, to have a far-reaching influence over the hide bound dogmas of bygone civilisations. The torch of modern enlightenment was lit up from the lamp of Dharma, which, having been set alight nearly twenty-four centuries and a half ago, still illumines the lowly hearts of over 500 millions in Northern and Eastern Asia. More than all, the missionary aspect of religion, which till then might be said to have been tribal and exclusive, the earnest endeavour to carry to all, even to those outside the pale of one's tribe, caste or persuasion, tidings of peace and goodwill among men, was first inculcated to the world by Gautama, when he said sending out his disciples, "Let not two of you go the same way. Preach, O Bhikkus, the doctrine which is glorious"; and the world has since been influenced by the proselytizing zeal of

one creed or another, of Jesus, Mahomet, Ramanuja or Nanak. In short, the history of the world would have been a good deal different from what it is but for the event of Kapilavastu, alas, so soon forgotten in the land of its origin. How pregnant with world-wide effect and importance is the appearance of a single individual on the stage of history !

This period of Buddha's activities is interesting in more than one direction. At the time when the Thathagatha was setting in motion the wheel of the New Dispensation, Mahavira was laying in India the foundations of the Jaina religion. Then it was that Confucius awoke China with his code of morals and Greece began to develop philosophy as a distinct branch of study and was destined, soon after in the Age of Pericles, to attain in many departments of human activity a state of progress, still an object of envy and admiration to the world. Rome always intent on civic advancement and political liberty was then transforming itself into a Republic, and the Persians, having overthrown the empire of the Medes, set up a monarchy of their own, and having subjugated Babylon and Egypt, turned their eyes towards India and Greece.

"In each of these widely separated centres of civilisation," says Professor Rhys Davids (*Buddhist India*, p. 239), "there is evidence about the sixth century B.C. of a leap forward in speculative thought, of a new birth in ethics, of a religion of conscience threatening to take the place of the old religion of custom and magic," which circumstance may be said to constitute "the best dividing line, if there was any, between ancient history and modern, between the old order and the new."

The date of Buddha's Nirvana thus comes to be of more than passing importance. It forms a significant landmark, at all events, in the history of India. In that year was held the first Great Buddhist Council at Rajgriha, the then capital of the Magadhan Empire, under the distinguished Presidency of Kasyapa. It was the eighth year of the reign of Ajatasatru, king of Magadha, son of that Bimbisara of the Saisunaga dynasty, who stopped a great sacrifice he was then pompously celebrating, at the gentle bidding of Gautama when he spoke

"Of life, which all can take but none can give,
Life, which all creatures love and strive to keep."

The epoch of the Nirvana gradually came to be the commencement of an era, adopted by Asoka in some of his inscriptions and by the chronicles of Southern Buddhists. It was prevalent in India even in the days of the great astronomer Vriddhagarga, who

is known to have flourished in the 2nd century B.C. The era became so universal during the period of Buddhist supremacy in India that the word saka, or sakakala, originally intended to denote the era of Sakya's Nirvana, came subsequently to signify any era. Thus it will be readily seen that it is desirable to fix this epoch for a proper understanding of the history and chronology of Ancient India.

Many fanciful dates have been ascribed for the epoch which need not here be seriously discussed. The Northern Buddhists give dates ranging from 2422 to 546 B.C., and the Aini Akbari of Abul Fazl fixes 1246 B.C. for the event. The Tamil Manimegalai gives the year 1616 of some unknown era, probably of the Kali, and the Buddhists of Ceylon, Burma and Siam have uniformly been regulating their calendars on the basis that the Nirvana occurred in B.C. 543. The Western scholars are likewise as much divided in their opinions, though their dates range only from 544 to 370 B. C. Professors Rhys Davids and Kern give 412 and 388 B.C. respectively for the Para Nirvana, whereas Max Muller to the last maintained that 477 B. C. was the correct date. Dr. Fleet considers the even

to have taken place in B.C. 482 * and Professor Oldenberg and M. Barth fix it in 480 B.C. Mr. V. A. Smith has given us three different dates, B.C. 508 in his '*Asoka*', 487 in his '*Early India*', and 480 to 470 B.C. in a recently published article. † It is my present purpose to consider whether with all these discordant and divergent opinions before us, we cannot yet discover a date in thorough accord with the materials available to us, and should we be able to deduce such a date, also to find out why the Southern Buddhists have for a long period of time uniformly accepted 544-3 B.C. for the epoch.

For the purpose of such an enquiry we have first to determine the epoch of the Maurya Era, which again can only be fixed by a discussion of the dates of Chandragupta, the founder of the Maurya Dynasty, and of his grandson Asoka Vardhana, who made a world-religion of the creed of Buddha. This Asoka is different from Kalasoka of the Ceylonese Chronicles, who has been identified with Mahapadma Nanda of the Puranas, and in whose reign the second Buddhist Council is reputed to

* J. R. A. S., 1903, pp. 179 and 669.

† *Indian Review*, Vol. viii, p. 561.

have been held at Vaisali under the Presidency of Ratha after the lapse of a century, from Buddha's Nirvana. According to the Ceylonese Chronicles, Asoka Vardhana Maurya, on the other hand, was converted to the Buddhist faith in the fourth year after his accession and formally crowned soon after in the same year. He is therein stated to have held the Third Buddhistic Council under Tishya in his eighteenth regnal year, 235 years after the death of Buddha. *

In a Rock Edict of his thirteenth year (and Asoka always counts his years from the time of his coronation), Asoka says that he made war with Kalinga in his ninth year and that, as remorse came upon him in consequence of the immense destruction caused during the war, he resolved thenceforth to give up military conquests, and then proceeds to say :—

And this is the chiefest conquest in His Majesty's opinion, the conquest by the Law of Piety; this also is that effected by His Majesty both in his own dominions and in all the neighbouring realms as far as six hundred yojanas—even to where the Yavana King named Antiyoka dwells, and, beyond that Antiyoka, to where dwell the four kings severally named Turamaya, Antikina, Maka, and Alikasandaro, and in the south, the Kings of the Cholas and Pandyas and of Simhala.

* For these and other particulars, see Turnour's *Mahawanso*, edited by Wijesinha, Oldenberg's *Dipawanso*, and V. Smith's *Asoka*, pp. 159-174.

The Yavana Kings have thus been correctly identified :—Antiyoka with Antiochus (Theos) who ascended the Syrian throne in 261 B. C. and died about 246 B. C. ; and the farther Kings Turamaye, Antikina, Maka and Alikasandare respectively with Ptolemy (Philadelphus, King of Egypt from B. C. 285 to 247), Antigonas (Gonatas, King of Macedonia from B. C. 278 to 242), Magas (King of Cyrene who died in 258 B.C.), and Alexander (King of Epirus from B. C. 272 to 258). It is thus evident that the Missionaries, sent by Asoka to these kingdoms between the ninth and the thirteenth year of his reign, reached them between B. C. 261 and 258, the dates respectively of the accession of Antiochus Theos and of the death of Magas, King of Cyrené. As the Missionaries might most probably have reached the Greek Kingdoms about a year after the conquest of Kalinga, we may safely infer that the tenth regnal year of Asoka corresponded with B. C. 260 or 259, or in other words, that his coronation was celebrated about the year 269 B. C. And as, according to the chronicles, the coronation was in the fourth year after his accession to the throne and the reign lasted for over 37 years after the coronation,

we may regard his reign to have extended from about B. C. 273 to 231.

We have next to determine the date of Chândragupta. The Ceylonese Chronicles tell us that Chandragupta reigned for 24 years and that his son Bindusara reigned before Asoka for a period of 28 years. The Vayu Purana gives the same period for Chandragupta, but assigns a period of 25 years for Bindusara, which may be incorrect as the total of the periods of the individual reigns of this dynasty fall short of the total period given for the whole dynasty by about 4 years. Following the chronology of the Ceylonese Chronicles, the evidence of which, in this case at any rate, there is not much reason seriously to doubt, we get $273 + 52$ or 325 B. C. for the beginning of the Maurya Era dating from Chandragupta's accession to the throne of Magadha.

We have now to see if there is anything in the Greek accounts of this period of Indian History to militate against the correctness of the above date. In speaking of the report brought to Alexander that the Gangaritans and Praesians (i.e., of the Prachi or Magadha Kingdom) were prepared to meet with a huge army the attack

of the Greeks, in consequence of which, Alexander was made to retrace his steps, Plutarch, who lived about the beginning of the Christian Era, says (Life of Alexander, 72) :

"For Androcottus who not long after reigned in those parts * * with an army of 600,000 men subdued all India. * * Androcottus, then a youth, saw Alexander there and is said often afterwards to have been heard to say that he missed but little of making himself master of these countries; their king who then reigned, was so hated and despised for the viciousness of his life and the meanness of his extraction."

We may infer from this extract that Androcottus or Chandragupta was at the time sufficiently influential and mature so as to be able to meet Alexander in the Punjab and that the time was then favourable for the overthrow of the Magadhan King, as Chandragupta himself found soon after when he supplanted the Nanda Dynasty.

Quintus Curtius Rufus and Diodorus Seculus, of about the first century of the Christian Era, corroborate Plutarch as regards the wickedness and low origin of Nanda, the then reigning King of Magadha, who is variously called Agrammes, or Xandrames, or Nandrus. Justin, probably of the 5th century A. D. but whose materials are drawn from Pompeius of the 1st century, says:

"Seleucus Nicator after the partition of Alexander's Empire, took Babylon, passed over to India which after

Alexander's death, as if the yoke of servitude had been shaken off from its neck, had put his prefects to death. Sandrocottus was the leader who achieved this freedom; but after his victory, he forfeited by his tyranny all title to the name of liberator, for he oppressed with servitude the very people whom he had emancipated from foreign thralldom. He was born in humble life but was prompted to aspire to royalty by an omen significant of an august destiny. For when by his insolent behaviour he had offended Nandrus and was ordered, by that King to be put to death, he sought safety by a speedy flight. * * It was this prodigy (of a lion licking him) that first inspired him with the hope of winning the throne, and so having collected a band of robbers, he instigated the Indians to overthrow the existing Government. When he was *thereafter* preparing to attack Alexander's prefects, a wild elephant approached him, * * and receiving him on its back fought vigorously in front of the army. Sandrocottus having thus won the throne was reigning over India when Seleucus was laying the foundations of his future greatness." *

It has been the fashion to infer from the above extracts that Chandragupta ascended the throne of Magadha after Alexander's prefects were put to death, i.e., at about 321 B. C. according to certain recent scholars, or 315 B. C. according to the late Professor Max Muller. But neither of these dates, it is submitted, can legitimately be inferred from the extracts given above. It is clear from the statement of Justin that Chandragupta prepared himself to attack Alexander's

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præfects in the Punjab, (who were put to death soon after Alexander's death in B. C. '323,) only *after* the overthrow of the Nanda Dynasty. And this is but what ought to be expected under the circumstances. Banished from Magadha by the last King of the Nandas, he sought refuge in the Punjab, where he met Alexander and his army in 326 B. C. He profited by the lessons of Alexander's intrepid marches and military tactics, and knowing that the then King of Magadha was hated on account of his wickedness and mean origin, and taking advantage of the confusion prevailing in Northern India by reason of Alexander's conquest, he secured the assistance of certain tribes, invaded Magadha and succeeded in setting himself up on the throne. This may be considered to have taken place soon after Alexander left the Punjab, or in 325 B. C. Having firmly established himself in the sovereignty of the realm and made himself secure against internal enemies, he turned his attention to Punjab at the right moment when news was received of Alexander's death, and overpowering his præfects, added it to the dominions of Magadha. Consequently Chandragupta was already ruling a great

empire when Selucus was but laying the foundations of a greatness, which was consummated by the establishment of the Seleucidian Era of 312 B.C.

In this opinion, we are also supported to some extent by the details of the *Mudra Rakshasa*, a remarkable drama of Visakhadatta of the 'early part of the eighth century,'* and of the commentator's introduction thereto. We are therein informed that the "evil-hearted" sons of the old Nanda King became envious of Chandragupta, who was then in command of the army. Chandragupta consequently left Pataliputra, the capital of Magadha, and under the advice of the Brahman Chanakya, sought the help of a Mlechcha General. By liberal promises this Mlechcha was induced to assist him in laying seige to Pataliputra. It was eventually taken; and the Nandas having been put to death, Chandragupta ascended the throne, no less by the craft of his wily minister than by the prowess of his arms.

Thus the accession of Chandragupta to the throne of Magadha, which is the epoch of the Maurya Era, has to be placed in 325

* Telang's Intro. to *Mudra Rakshasa*, p. xxvi.

B. C., whether as the result of an examination of the Greek and other authorities of the West or on a consideration of the data available with reference to Asoka. The dates, 325 B. C. for the commencement of the reign of Chandragupta and 269 B. C. for the coronation of Asoka, are of [immense importance for the fixing of the date of the Nirvana of Gautama Buddha; for, as according to the Ceylonese Chronicles the accession of Chandragupta and the coronation of Asoka took place respectively after the expiry of 162 and 218 years after the Nirvana, this last event may be considered to have taken place in 487 B. C. These statements of the Chronicles are accepted as correct even by the late Professor Max Muller, (*Ancient Sanskrit Literature*, p. 299) and in fact these have been remarkably corroborated by certain inscriptions of Asoka, which have recently been discovered.

The inscriptions of Asoka, which have been found from Guzaret on the west coast to Orissa on the east, from Afghanistan in the north to Mysore in the south, are remarkable as giving us an insight into the wide range of the dominions of the Mauryan Dynasty, whose first king

Chandragupta is reported to have brought the whole world "under one umbrella." They are also of unique importance in the history of paleography for having furnished the genius of Prinsep the clue to the decipherment of the earliest known Indian Alphabet,—the same service which the bilingual inscription of Malta, the Rosetta stone and the Rock of Behistan have rendered to the study of cuneiform inscriptions and Egyptian Hieroglyphics. Of these inscriptions, the so-called Minor Rock Edicts of Sahasram in Bengal, of Rupnath in the Central Provinces, of Bairat in Rajaputana and of Siddapura, Jatunga Ramesara and Brahmagiri in Mysore, are of immense help in the fixing of the chronology of Asoka, and of Buddha's Nirvana. All of these contain variant recensions of practically the same text; but those at Brahmagiri and Rupnath are the best preserved. The Brahmagiri text is thus translated by Mr. Vincent Smith: (Asoka, p. 140.)

"By order of the Prince and Magistrates at Suvarnagiri, the Magistrates at Isila, after greetings, are to be addressed as follows:—

His Majesty commands:—

For more than two years and a half I was a lay disciple without exerting myself strenuously. A period of

six years, or rather more than six years, has elapsed since I joined the Order and have strenuously exerted myself; and during this time the men who were, all over India, regarded as true, have been, with their gods, shown to be untrue.

For this is the fruit of exertion, which is not to be obtained for himself by the great man only; because even the small man can, if he choose, by exertion win for himself much heavenly bliss.

For this purpose has been proclaimed this precept, namely, Let small and great exert themselves to this end. My neighbours, too, should learn this lesson; and may such exertion long endure!

And this purpose will grow—yea, it will grow vastly—at least half as great again will be its growth.

And this precept was proclaimed by the Departed, 256 (years have elapsed since then ?) * * * Written by Pada, the Scribe."

The Rupnath text has also been translated by the learned author (Asoka, p. 138):—

"Thus saith His Majesty:—

For more than two years and a half I continued to be a hearer of the Law without exerting myself strenuously. A period, however, of more than six years has elapsed since I joined the Order and have strenuously exerted myself.

The gods who at that time, all over India, were regarded as true gods have now become untrue gods.

For this is the fruit of exertion, which is not to be obtained by the great man only; because even the small man can by exertion win for himself much heavenly bliss.

And for this purpose was given the precept, 'Let small and great exert themselves.'

My neighbours, too, should learn this lesson; and may such exertion long endure!

For this purpose of mine will grow its growth—yea, it will grow vastly, at least half as large again will be its growth.

And this purpose has been written on the rocks, both here and in distant places; and wherever a stone pillar exists, it must be written on the stone pillar.

And as often as a man seasons his cooked food with this condiment, he will be satisfied even to satiety.

This precept has been given by the Departed. 256 years have elapsed, from the departure of the Teacher (?)."

No serious objection can possibly be, nor has been, raised to the correctness of this translation, except in regard to a few particulars. The period given for the interval when Asoka was a lay disciple and the numerical figures in the last paragraph have been differently interpreted by different authors. As regards the numerical figures, the Brahmagiri text reads thus:—
 "Iyam cha savane sa v (a) p (i) te Vyuthena 256 se." The Rupnath text runs thus: "Vyu-thena savane kate 256—Sata vivasa ta." We find the following at Sahasram: "Iyam (cha savane) vivutbena duve sapannalati sata virutha ti 256". The various renderings of this puzzling passage have been collected by Dr. Fleet in the Journal of the Royal Asiatic Society for January 1904. M. Senart considers that the words refer to the "256 settings out of Missionaries," and Professor Oldenberg, to the number of men who taught on earth. But the most rational interpretation hitherto attempted

is the one given by Dr. Buhler and adopted by Mr. Smith in the translation given above. "Dr Buhler who first brought the contents of the edict to public notice in 1877, maintained from first to last that the words and the numerical symbols are a date and that the passage means that the edict was promulgated when 256 complete years had elapsed and in the course of the 257th after the death of Buddha." That the figures 256 represented a date is also the opinion of Cunningham, Max Muller, Kern, Pischel, Beyer and Rhys Davids, though the last named Professor considered the figures to represent the number of years elapsed since the great Renunciation of Buddha in the 29th year of his age. In endorsing the view that the figures represent a date and that they are reckoned from the Death of Buddha, Dr. Fleet pointedly mentions that there is no word used in the Brahmagiri text "to give how 256 is to be applied. This is instructive, for the idea of date can be inferred, but not of persons." He therefore translates the Sahasram text as follows: "And this same precept was composed by the Wanderer: (Of) centuries two (hundred) and fifty-six (years) have elapsed since the Wanderer: or in figures 200 (and) 50 (and)

6." The Rupnath text is thus translated : "(This same) precept was composed by the Wanderer ; (of) centuries 200 (and) 50 (and) 6 (years have elapsed) since (his) wanderings." And the Brahmagiri is translated thus : "And this same precept was inculcated by the Wanderer : 200 (and) 50 (and) 6 (years have elapsed since then)."

There can be no doubt that both Dr. Buhler and Dr. Fleet have correctly surmised that 256 is a date and that it begins in the year of Buddha's death. But with the greatest deference to their very high attainments, I must humbly submit that they are wrong with reference to the person denoted by the word 'Vyutha' or 'vivutha' which simply means 'Departed.' I consider that the precept is of Asoka himself, given almost on his deathbed, that probably he gave instructions to "the prince and magistrates of Suvarnagiri", where he seems to have lived in religious retirement, to engrave his last commands in all parts of his dominions, and that possibly before his instructions could be carried out, he departed from this world. If this precept were to be considered as that of Buddha, scholars ought to have, but have not, been able to

point out among Buddha's sayings the teaching herein engraved, namely, "Let small and great exert themselves." Nor does this find a place in the list of the passages which Asoka culls from Buddha's sayings and publishes for the edification of the monks of Magadha in the Bhabra Edict, famous for its clear showing of Asoka's adherence to the Buddhistic faith. Moreover, these words under discussion, namely, *Iyam cha savane* * * 256 so in the Brahmagiri Text, and *Vyuthena savane* * * *vivasa ta* in the Rupnath Text, do no more belong to the body of the text than the words "*Padena likhitam lipi karena*" (written by Pada the Scribe), which we find at the end of the Brahmagiri, Jatunga Ramesara and Siddapura inscriptions. Just as the Scribe immortalised himself by adding his name at the end of the inscription, so even the Prince and Magistrates of Suvarnagiri, who published this inscription, began it by proclaiming that it was at their instance that it was published, and ended it by appending thereto its date in the years of the Nirvana. The term 'Vyutha' was applied by them to Asoka who had probably just then 'Departed' to the other world, and, as it was no longer possible, on account of his death, to

adhere to the practice of dating the inscriptions of Asoka in the years of his reign, this inscription had to be dated in the years of the Nirvana of Buddha. The Brahmagiri text may therefore be translated thus: "This teaching was proclaimed by the Departed (Asoka) in the year 256." The Rupnath and Sahasranit texts have, in addition, the following words respectively, namely, "256 Sata vivasa ta" and "Sata vivutha ti 256." Dr. Bühler correctly translates 'Sata' as 'Teacher' and considers it refers to Buddha; and in my humble opinion, these words mean "in (the year) 256, since the departure of the Teacher (Buddha)." I therefore consider that the precept was perhaps the last admonition to his people of Asoka, who 'departed.'

Like some full-breasted swan,
That, fluting a wild carol ere her death,
Ruffles her pure cold plume, and takes the flood
With awarthy webs.

The next point to be considered is the period given in the inscription for the interval when Asoka was a lay disciple. The exact word used in the Rupnath inscription for this period, is Adhitisani, whereas the Brahmagiri text has Adhatiyani. Dr. Bühler translated this Magadhi word in the columns of the Indian Antiquary for 1877 (p. 256), as meaning 32½ years, which inter-

pretation seems to be supported by Dr. Fleet in the J. R. A. S. for 1903, p. 829, and for 1904, p. 305. But Dr. Buhler subsequently gave up this construction and he states in the *Epigraphia Indica*, Vol. III. (p. 134), that the word means $2\frac{1}{2}$ years, an interpretation which, though wrong, has been adopted by Mr. Smith in his '*Asoka*' and by Mr. B.L. Rice, the discoverer of the Mysore Edicts.* The former says :

"We have Asoka's own authority for stating that in the ninth year of his reign, for the reasons above explained, he joined the Buddhist Community as a lay disciple."†

I submit that we have no such authority. The reasons advanced by Mr. Smith are almost the same as those relied on by M. Serrant and are based on the 13th Rock Edict. Asoka says therein that he conquered the Kalingas in the ninth year of his reign, that he was greatly affected by the horrors of war and that ever since "he had zealously protected the Law of piety, had been devoted to that Law and had proclaimed its precepts." I think that it is wrong to draw from this statement that Asoka was converted only then for the first time. It simply shows that the bloodshed caused in the Kalinga War opened

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his eyes to the iniquity of military conquests, and that he resolved thenceforth to be zealous in the discharge of religious duties. It means that he then became, what in modern language may be called, regenerated. The absence of any specific statement in this long and biographical record that he was only then converted, shows on the contrary that he was a Buddhist already. Again the statement made in the eighth Rock Edict on Pious Tours, to the effect that in former times kings used to go out on tours for purposes of pleasure, but, in the eleventh year of his reign, "he went on the road leading to true knowledge, whence originated tours devoted to piety" during which, pious men were seen and largess bestowed,—this statement,—has been interpreted by Prof. Rhys Davids and Mr. Smith, as showing that Asoka became a monk in the eleventh year of his reign by taking the eight-fold path. This idea, I venture to express, never entered into the mind of the pious monarch. What he clearly intended to proclaim was that whereas former kings went out only for purposes of mundane pleasures, he, on the other hand, toured in his provinces only for the purpose of acquiring spiritual merit. As a matter of fact,

Thirdly, in this inscription strenuous exertion for a short period as a member of the Order is contrasted with, and considered superior to, the moderate exertion of a layman for a longer period. It is absurd, therefore, to contrast strenuous exertion for the longer period of six years with moderate exertion for the shorter period of two years and a half.

Fourthly, we find in this inscription the first and only glimpse of an intolerant spirit ever exhibited by Piyadasi. Even as late as the 28th year of his reign, he says in the sixth and the seventh Pillar Edicts :

"I devote all my attention to all communities. All sects have been revered by me." "He also arranged that censors should be occupied with the affairs of the Buddhist clergy, as well as with the Brahmans, Jains, Ajivakas and, in fact, with all the various sects."

The twelfth Rock Edict of about the fourteenth year of his reign is devoted solely to the subject of Toleration and Asoka declares therein :

"A man must not do reverence to his own sect by disparaging that of another man for trivial reasons. Disparagement should be for adequate reasons only, because the sects of other people deserve reverence for one reason or another."

He recommends charity and respect to Brahmans in many of his edicts and bestowed certain

added the last dot after his Vassa residence at Canton in China." The Record is stated to have "indicated 975 dots (years) from the Nirvana to 489 A. D. ‡" If this statement is found to be correct, then we have one more reason for considering the Nirvana to have occurred in 487 B. C.

We have lastly to consider how it is that the Ceylonese tradition as recorded in the chronicles, which, as we have seen, is not without its great value for historical and chronological purposes, has all along been that Buddha attained Nirvana in the year 543 B.C. I am aware that scholars like Max Muller and Mr. Smith unceremoniously brush aside all the chronological particulars of these chronicles prior to 160 B. C. as unreliable, while others go so far as to condemn them wholesale. But as Professor Rhys Davids says, "It jars upon the reader to hear the chronicles called the mendacious fictions of unscrupulous monks. Such expressions are inaccurate; and they show a grave want of appreciation."† Dr. Fleet goes even so far as to say that 543 B.C.,

‡ J. R. A. S. July, 1896; Ind. Ant. 1884, p. 150. J. R. A. S. Jan. 1903, p. 33

† Buddhist India, p. 274.

the date according to the chronicles as interpreted by the editors Turnour and Wijesinha, "is not asserted by or supported by anything contained in Dipawansa or the earlier part of the Mahawansa, but was simply invented, as far as I can see my way, in the 12th or 13th century A.D." * But this is certainly a mistake; for, as Bishop Bigandet points out,

"There is perhaps no single point in the whole history of India on which *the chronicles* of Ceylon, and Further India, are so *distinct* and *unanimous* than that Buddha died—or as they express it, attained Nirvana—at the age of eighty years in the year 543 B.C. or in the year 148 of the Eetzana or Anjana epoch."

I believe that the erroneous idea regarding the value of the Ceylonese Chronicles is due to a certain extent to the circumstance that no explanation was forthcoming why the Ceylonese date for the Nirvana should be nearly six decades anterior to the one which may be inferred from reliable data. This antedating of the Era of Nirvana injuriously affected to a certain extent the correctness of the Chronology of the Dipawansa and the Mahawansa. Turnour accepts 543 B.C. for the Nirvana, but supposed that the date of Asoka was carried back by a period of sixty years for the reason that it was thought expe-

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* J. R. A. S., Jan. 1904.

dient for the good of religion that the landing of Vijia, the first Buddhist Missionary to Ceylon, should be coincident with the death of Buddha.

But this far-fetched explanation cannot be accepted for the simple reason that it assumes a wrong date, namely, 543 B. C. for the Nirvana of Buddha. On the other hand, -the real reason for the antedating by the Chronicles of the Nirvana by a period of 56 years, the difference between the Ceyloneso date 543 B. C, and B. C. 487 the date advanced herein, must be sought for elsewhere. I believe that it is due to an erroneous belief entertained by early Buddhists that the Maurya Era began with Asoka, the Constantine of the followers of Gautama. They ignored the possibility of the era commencing with the accession to the throne of Magadha of a non-Buddhist King, namely, Chandragupta who did not loom so largely in public estimation. They knew that Asoka dated his edicts by the years elapsed since his coronation and naturally supposed that the Maurya Era, which was current in the third and second centuries before Christ, as can be inferred from the Hathigumpha inscription dated in the year 165 of the Maurya Era, began with the coronation of their

greatest Emperor. Asoka's coronation was thus placed 56 years earlier, the interval between the Mauryan epoch of 325 B. C. and 269 B. C., the correct date of his coronation; and as Buddhists believe that he was formally crowned "after 218 years had elapsed since the death of Buddha", the Great Sakyamuni was erroneously supposed to have passed "Unto Nirvana, where the silence lives," in the year $325 + 218$ or 543 B.C.



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CHAPTER IV.

THE DATE OF KANISHKA:

THE discovery in a *stupa* recently unearthed near Peshawar of an inscribed casket, and inside it, of a rock crystal receptacle, supposed to contain the seal of Kanishka and three fragments of the charred bones of Lord Buddha, adds fresh interest to the question of the dates of the great Philosopher and his royal devotee. I have tried to show in my last paper* that Gautama died in 487 B. C. Of the various reasons adduced in support of that date, it is possible that one of them, namely, the interpretation of the words *adhitisani* or *adhatiyani* and *savachharam* or *chhavachhare*, which I understood to mean '32½' and '6' years respectively, may not be quite acceptable. The only alternative interpretation that can be given also confirms that date. The latter word may be taken to mean 'one year'† and the former may be considered as the equivalent of the modern

* See also Indian Antiquary, 1908, p. 341.

† See Ind. Ant. 1908, p. 26.

Mahratti and Hindi word *adatis** meaning 38. According to this interpretation, Asoka had been a lay disciple for 38 years and a monk for one year before the subject of this inscription was ordered to be published by him. As the coronation of Asoka (269 B. C.) took place† within a year after his conversion (270 B.C.), and as the inscriptions in which these words occur were published after the lapse of (38 + 1 or) 39 years after his conversion, and of 256 years after the *Nirvana*, Buddha passed away from this world in (270—39 + 256 or) 487 B.C.‡

On the other hand, the date of Kanishka, who ruled over Kashmir and the Punjab, is still a disputed question of Indian chronology. It was at one time supposed that what is at present known as the *Salivahana Sakabda* beginning in 78 A.D. commenced with the reign of this king § This

* cf. Dr. Fleet's interpretation of *Adhahosikyani* = 8 Kos. J. R. A. S. 1906, p. 401.

† Ind. Ant. 1908, p. 343.

‡ Mr. V. A. Smith kindly writes to me under date 4-10-09: "I think you are right in the date B. C. 487 and probably right in your ingenious explanation of 543 B. C. I am now rather disposed with you to accept 28 years for Bindusara and to place Chandragupta's accession in B. C. 325 rather than in 322."

§ Fergusson, Saka and other eras, p. 9.

theory was subsequently given up* and Dr. Fleet now maintains that the epoch of 57 B.C. either marks the accession of Kanishka, or coincides with that event † Dr. Bhandarkar, on the other hand, would put this ancient king to isolate a date as 278 A.D. ‡ and Mr. Vincent A. Smith thinks that Kanishka began to reign only after 124 A.D. § In the midst of these widely differing dates, each of which is supported by very respectable authority, one is often tempted to give up one's hope of ever unravelling the darker periods of Ancient Indian History.

¶ It is not my purpose here to summarise the arguments of these and other learned authors in support of their respective dates. I shall try in a humble way to show that none of these dates is convincing and that the balance of probability is rather in favour of a totally different date. Before, however, entering upon such a discussion, I may here state in the words of Dr. Stein that "whatever date we shall have ultimately to adopt in the light of subsequent finds and researches, so

* Ind. Antiquary, 1903, p. 422.

† J. R. A. S., 1907, p. 165.

‡ But see "Indian Review," 1909, p. 401, where he gives 260 A. D.

§ Early History of India, 2nd Edition, p. 240

much may already now be considered as certain that Kanishka's reign cannot be removed by more than a century from the commencement of our Era."*

Inscriptions and coins of three kings, namely, Kanishka, Huvishka and Vasushka, have been found in Northern India, all belonging to the same group, being connected together in language, script, legends and emblems. The inscriptions of Kanishka range from the year 3 to 41, those of Huvishka (Huvashka or Huksha) from 28 to 60, and those of Vasushka (Vasishka, Vasa-hka, or Vasudeva) from 74 to 98, of some era to be presently ascertained. It is rightly considered that these kings belonged to the same dynasty. As regards the order in succession of these kings, it is generally supposed that Huvishka succeeded Kanishka, and preceded Vasushka, on the throne of Kashmir and the Punjab, a view which seems to me to be incorrect. In the first place, the *Rajatarangini*, an old history of Kashmir written in 1148 A.D., refers to these very Kings in a different order. According to the author's own statement,† the materials for the work were drawn from ancient books, inscriptions and

* *Rajatarangini*: Intro: p. 61. | + 1. 15.

as Vasishpa, who, in my opinion, is the very king called Jushka in the chronicle and named variously as Va-sushka, Vasashka, Vasishka and Vasudeva in the inscriptions and coins.* Thirdly, that the dynasty came to an end with Kanishka is also hinted at in the legend published by M. Sylvain Lavi. It goes on to state that Kanishka in the last days of his life, greatly dejected at his not having been able to subjugate the northern region, though he had previously conquered the other three quarters, made strenuous preparations for moving his army to the north. Enraged at this insatiable desire of his for further conquests, his people "covered him with a quilt when he was ill and a man sat on top of him and the king died on the spot."† Such a calamitous ending is more in keeping with the passing away of the dynasty than with the theory of his having been succeeded peacefully on the throne by a sovereign like Huvishka. Fourthly, the Ara inscription, already referred to, of "Kanishka, son of Vasishpa, of the 41st year," also shows that Huvishka, whose inscriptions date from the 33rd, or as some suppose, even from the 28th year, could not have

* V. A. Smith's Early History of India, p. 251.

† V. A. Smith's Early History of India, p. 251.

succeeded Kanishka whose inscriptions extend up to the 41st year. It has been suggested by Mr. R. D. Bannerjee that Kanishka might have been engaged beyond the frontiers of India when Huvishka was left in charge in India, who might therefore have published inscriptions even during the life-time of Kanishka * But judging from the number of the inscriptions of Huvishka during that period and also from the manner in which he is therein described, I venture to believe that this explanation is highly improbable.

Fifthly, there has long been prevalent in Kashmir and the Punjab, the provinces over which these three Kushana or Turushka princes ruled, an era known as the Saptarshi Era, in the reckoning of which the figures for hundreds and thousands were generally omitted.† Both Alberuni, a Mussulman chronicler of the eleventh century, and Kalhana, the author of the *Rajatarangini*, were aware of this peculiarity of this era; and in the days of the former, it was prevalent also in Multan and the adjacent country.

* Ind. Ant., 1908, p. 59.

† Also known as Lokakala, or 'Mundane Era'. See Sewall's *Indian Calendar*, p. 41. Ind. Antiquary, XX. 149ff. Dr. Stein's *Rajatarangini*, Intro. p. 58.

According to the current reckoning, this era is said to have begun in 3076 B.C., twenty-five years later than the epoch of the Kaliyuga. I have already shown in my papers on the "*Chronology of the Puranas*," and the "*Chronology of the Siddhantas*,"* that the Kashmir era of 3076 B. C. is based on, and is a 'later development of, the earlier' Yudhishtira or Saptarshi era of 1176 B.C., and that the former came into existence for the first time only about the fourth century after Christ. I have also shown therein and also in my book on the "*Chronology of Ancient India*,"† that the elements of the Vedanga Jyotisha, the figures given by the classical historians for the years elapsed up to the time of Alexander the Great, the epoch of the era of Kollam Andu introduced into Malabar by the Aryan Namburi immigrants from the north, the interpretation of a Sloka of Garga quoted in Varahamihira's Brihat Samhita and various other circumstances point to 1176 B. C. for the epoch of the era of Yudhishtira; and

* "Indian Review," 1904, pp. 593-607; 1906, p. 280. Chapters I and II *infra*.

† *First series*. Summarised at p. 85. It is possible that some of the arguments advanced in the book (published, 1901) require revision; but I submit that the main conclusions are correct.

also that the original Yudhishtira era of 1176 B. C. continued to be current till about the fourth century after Christ, after which the epoch of the era, for reasons which it would be tedious to repeat here, was shifted back two thousand years earlier to 3176 B. C., as can be gathered from the details of the Vishnu Purana, or to 3076 B. C. according to the version of the Kashmir era, or to 3102 B. C. by Aryabhata in 499 A. D. to suit his astronomical requirements. It may also be stated that the reason for the omission of the figures for hundreds and thousands in the old Saptarshi era was the equally old notion that the Saptarshis or the Seven Stars of the *Ursa Major* moved through an arc of $13^{\circ} 30'$ (one Nakshatra) in every period of one hundred years. The number of elapsed periods of one hundred years since the date of Yudhishtira was calculated by the number of Nakshatras thus 'passed over by the Seven Rishis' from the *Magha Nakshatra*, the starting-point, and was denoted by the particular Nakshatra in which the Rishis were supposed at any time to be stationed; and this method of reckoning is adopted in the old orthodox Puranas, *Vayu*, *Matsya* and *Vishnu*,

and also in the Bhagavata and Brahmanda.* I am therefore of opinion that the era of the Kushana kings was this old Yudhish-tira era of 1176 B. C. in which the figures for hundreds and thousands were generally omitted; and as Kanishka reigned till the 41st year and Hushka or Huvishka began his reign in the 28th year, it may be stated with confidence that these two kings reigned in different centuries and that the former king counted in the years of the century that succeeded the one during which the other two kings reigned. Since Huvishka's inscriptions date from the 28th and extend up to the 60th, and according to both the chronicle and the inscriptions and coins, there were only three kings of this dynasty, it is also clear that this era had already been in existence prior to the reign of Huvishka. I would therefore accept as correct the order of kings given in the Rajatarangini, namely, Huvishka and then Vasushka and lastly Kanishka, and hold that the inscriptions of Huvishka of the years 28 to 60 refer most probably to the years 1128 to 1160, or (1176—1128 or) 48 B.C. to (1176—1160 or) 16 B.C., and that

* See Wilson's Trans. Vishnu Purana, Ed. Hall, Vol. IV, p. 229-234.

Vasushka's inscriptions of 74 to 98 and Kanishka's inscriptions of 3 to 41, range respectively from B. C. 2 to 22 A. D., and 27 to 65 A.D.

These dates are remarkably supported by several other considerations. To begin with, one Abhimanyu* is stated in the *Rajatarangini*, on the authority of the older work *Chhavillalara*,† as having succeeded the Kushana king Kanishka on the throne of Kashmir and the interesting fact is also recorded that, in his reign, the Mahabhashya of Patanjali, the famous commentary on Panini, was introduced into Kashmir by one Chandracharya‡ After him arose the native dynasty of Gonanda (III),§ which is said to have held power over the country for a long time. Who is this Abhimanyu? It is not consistent with historical criticism to deny his existence altogether, when his reign is remembered in connection with so interesting an incident. He seems to be as much a foreigner as the three kings of the Kushana dynasty, because he is not included in the native dynasty of Gonanda, which succeeded him. In my opinion, the Yuehchi king, Wema or Hima, was the person denoted by the name A-bhima-nyu, which was assumed as much on account of its

* I. 174. | †I. 19 and 20. | ‡ I. 176. | § I. 185.

being the name of the foremost of the young warriors of the Mahabharata as on account of the great similarity in sound between the two names ; just in the same manner and with the same purpose as the name of Vasudeva was adopted by Jushka, or Va-sushka, the father of Kanishka. It may be observed that many of these foreign kings adopted the names of the heroes of Ancient India and represented on their coins the figures of the Indian Deities. Wema is generally considered by scholars, on the testimony of coins and the Chinese Annals, to have reigned in the last decades of the first century A.D.* ; and this date is in thorough accord with the one we have arrived at for the end of the reign of his predecessor Kanishka, *i. e.*, about 65 A. D.

Secondly, it has been already suggested on the authority of the inscriptions that Huvishka reigned between 1128 and 1160, Vasushka between 1174 and 1198 and Kanishka between 1203 and 1241. It is therefore evident that Abhimanyu or Wema reigned very soon after the year 1241 of the Yudhishtira era. It is

* Mr. Smith's Early History of India, p. 242.

very noteworthy that this date is entirely corroborated by the *Rajatarangini*, which states that 1266 years * elapsed between Yudhishtira of the Mahabharata War and the rise of the dynasty of Gonanda III, or what is the same thing, the end of the reign of Abhimanyu. It is therefore clear that Abhimanyu or Wema must have reigned for some time between 1242 and 1266 of the Yudhishtira era or between 66 A.D. and 90 A.D.; and this date, as we have already stated, is quite in harmony with the date generally assigned to Wema by scholars.

Kanishka seems to have ruled a vast empire including the Upper Sindh, the Punjab, Kashmir, Yusufzui and also some parts of Afghanistan, and to have conquered the Chinese provinces of Yarkhand, Khotan and Kashgar. He is also said to have demanded hostages from the Chinese Emperor and Hiuen Tsiang relates that the place where

* I. 54. It is true that the author of the *Rajatarangini* gives a wrong date for Yudhishtira, *i.e.*, 2448 B.C.; but this is no doubt due to his having understood the verse of Garga quoted in *Brihat Sambita* in that way. This is however immaterial, as we are only concerned with relying on the old tradition reproduced in this book, that Gonanda III. began to reign over Kashmir 1266 years after Yudhishtira. See *Chronology of Ancient India*, First Series, pp. 68—77; "Indian Review," 1904, pp. 604-5. *Ante*, pp. 44—60.

the hostages were detained went by the name of Chinabhukti. This tradition may be pure invention; but it cannot be doubted that Kanishka made extensive conquests in the early years of the Han dynasty, when it was too weak to assert its power, and before General Panchao, the brilliant Chinese Commander, began his career of conquest in about 73 A.D. and extended the Chinese dominion as far as the confines of the Roman Empire. The Chinese conquests of Kanishka are still evidenced by the discoveries of Dr. Stein in the ruins of Khotan. Thus, Kanishka's conquests extended towards the east in the Chinese territories, in the south as far as Muttra and Benares, and in the west up to the Upper Sindh. But as the legend above referred to says, he was unable to conquer the northern region. The reason probably was that northern Afghanistan was then being ruled over by Wema's father, Kozulo Kadphises I. While Kanishka was engaged in the consolidation of his dominions, Kadphises I, one of the most powerful kings of the Yuehchi tribe that originally settled in Bactria in about 70 B. C., had already subjugated the four other clans of the same tribe, conquered various provinces to the north of the Hindukush, overpowered the last Greek king, Hermaeus of

northern Afghanistan, and ruled that country, in the beginning jointly with him and subsequently alone. The conquest of the fairer provinces of northern India was reserved for his son and successor, Wema. It is probable that for some time after Kanishka met with the unhappy death referred to above, Kashmir was practically in a chaotic condition, when advantage was taken of this circumstance by Wema to conquer the country. Wema was so far successful in his military enterprises that he is said even to have made bold to demand a Chinese princess in marriage and to have proceeded to conquer China. In this foolhardy attempt he seems to have signally failed, his army was destroyed, and he was forced to pay tribute by the Chinese General Panchao; and his power and influence seems to have thereupon dwindled till either by reason of his death or of some internal commotion in Kashmir, which we are not now in a position to discover, the native dynasty of Gonanda III. came again to power in Kashmir in about 90 A. D. This inference is supported by the significant circumstance that history does not know of any successor of Wema of his dynasty as ruling over Northern India.

Thirdly, the numismatic evidence available also confirms the dates given above for the Kushana kings. The coins of Kadphises I. contain portraits of the last Indo-Greek king, Hermaeus, with titles in Greek characters. "After a time while still preserving the familiar portrait of Hermaeus", says the learned historian of Early India,* "he substituted his own name and style on the legend. The next step taken was to replace the bust of Hermaeus by the effigy of Augustus (died, 14 A. D.) as in his later years, (or of Tiberius, 14 to 38 A. D.) and so to do homage to the expanding fame of that emperor. * * Still later probably are those coins of Kadphises I., which dispense altogether with the royal effigy and present an Indian bull and a camel". Thus in any case Kadphises I. began his reign in the earlier half of the first century, A. D.; and as he is said to have lived up to the age of eighty, he may have reigned down to about 65 A. D. His coins, unlike those of his son and of the three Kushana kings, do not contain the figures of any Indian Deity, a circumstance which shows that he was a stranger to India. General Cunningham and Lassen

* p. 223.

inferred, from numismatic and other evidence, that Kanishka reigned in the first-half of the first century A. D.* A Roman coin of the year 33 B. C. was found in a *stupa* erected by Kanishka and Dr. Fergusson finding the coin much worn out, thought that Kanishka should have lived somewhat later.† Wema and Kanishka issued gold coins agreeing in weight with the *aurei* of Rome, and as Mr. Smith points out, numismatic evidence leads one to suppose that the coins of Kanishka and Wema are influenced by those of the Roman Empire. The coins of these two kings are generally found together and "frequently display in the field the same four-pronged symbol and agree accurately in weight and fineness, besides exhibiting a very close relationship in the obverse devices."‡ It may therefore be fairly inferred that Wema succeeded Kanishka on the throne of Kashmir and the Punjab. Dr. Fleet's theory that Kanishka lived in 57 B.C. appears to be untenable for this reason, among others, namely, that the similarity between the coins of Kanishka and Wema would

* Num. Chro. Vol. VIII, p. 175 Ind. Alt. Vol. II, p. XXIV.

† History of Ind. and East Arch., p. 741. Max Muller's Ancient Sanskrit Literature, p. 289.

‡ Early History of India, p. 241.

most probably not have existed if these two kings lived nearly a century and-a-half apart. The figure of a king standing before a fire altar, first introduced by Vasushka on his coins, was copied by Kanishka and Wema ; and the figures of Siva and Bull appearing on the coins of Vasushka are also repeated on the coins of the son of Kadphises I. All these foregoing details go to prove that Kadphises I. and Wema as well as Vasushka and Kanishka lived in the first century A. D. As regards Huvishka, the date herein given for him, namely 48 to 16 B.C., is in a manner supported by the inference of Dr. Fleet, who assigns him to the last quarter of the first century B. C. on the strength of the absence of the Roman H from the coin legends of Huvishka.

Fourthly, Dr. O. Francke and M. Levi, basing their inferences on Chinese records, give respectively B. C. 2 and B. C. 5* for the Yueh-chi king therein referred to and these dates agree very well with the date we have arrived at for Kanishka's father Vasushka, the beginning of whose reign could not have been later than 2 B.C. and the end, not earlier than 22 A.D. ; who most

* Journal Asiatique, July, 1896 to June, 1897. Ind. Ant. XXXII, p. 417 and XXXV, p. 33.

probably was the Yueh-chi king of the story referred to by Dr. Francke, that communicated certain Buddhist books to a Chinese official.*

Fifthly, the date herein advanced for Kanishka receives further corroboration from the biography of Vasubhandu, written by Paramartha (499-569 A. D.), wherein it is stated that the last Council of Buddhism, which was presided over by Vasumitra, was held in the sixth century after Buddha's Nirvana. We know from the writings of Hiuen Tsiang and also from other sources that it was held under the patronage of Kanishka, who has therefore to be ascribed to about the middle of the first century A.D.

Sixthly, we have further confirmatory evidence from the writings of Hiuen Tsiang (629-645 A.D.), who probably following the Buddhist tradition then current in Hindustan, Gandhara and Kashmir, gives an interval of 300 years between Asoka and Kanishka; and as Asoka began to reign in 273 B. C., the commencement of Kanishka's reign may properly be placed in about 27 A. D., which agrees exactly with the date we have assigned to him, i. e., 27 to 65 A.D.

In this connection it may be stated that there are certain Brahmi and Kharoshtri inscriptions which

* V. A. Smith's *Early History of India*, p. 251.

are very like the Kushana inscriptions ranging from 28 to 98 and 3 to 41. There is also a "Jain inscription from the Kankali mound at Mathura of the year 299 which, in language and script, agrees exactly with the other votive inscriptions dated in the years 4 to 98 from the same site."* Dra. Buhler and Bhandarkar suggest that the Kharoshtri inscriptions of dates over 100 are nearly contemporaneous with the Kushana inscriptions. I may be permitted to state with reference to these and other various ancient-dated inscriptions discovered in the Land of the Five Rivers as well as near Muttra, that most of them refer to the Yudhishtira or Kali era of 1176 B.C., which was then current throughout Northern Hindustan, with the figures for thousands, and sometimes for both thousands and hundreds, omitted. I would therefore refer the Mathura inscription of 299 (1299) to 123 A.D., the Takht-i-Bahe inscription of Gondophares of the year 103 (1103) to 73 B.C., the Taxila copperplate inscription of Patika of the year 78 (1078) and Sudasa's of the year 72 (1072) to 98 and 104 B.C. respectively. The date assigned as above to Gondophares is confirmed by the fact that his coins have been found by Dr. Fer-

* J. R. A. S., 1903, p. 36.

gusson to be much older than those of Kanishka;* and it may be stated as a necessary corollary to this date, that the legend of the mission of St. Thomas to him cannot be taken seriously.

With the greatest deference to the learned scholars, I may therefore submit that the dates assigned by Mr. Smith and Drs. Bhandarkar and Fleet, namely, 127 A.D., 278 A.D. and 57 B.C. respectively, cannot be correct. Mr. Smith thinks that the Kushan era is the modern Kashmir Saptarshi era with 32 hundreds omitted and Dr. Bhandarkar would refer it to the Saka era with two hundreds omitted. There is no reason to suppose that the present Saptarshi era of Kashmir was ever current before the fourth century A. D. Neither can the era of the Kushanas be referred to any of the eras, Nirvana, Maurya, Samvat or Saka, for none of them is reckoned with the figures for any of the digits left out. It is moreover not to be expected that either the Malwa era of Samvat or the Deccan era of Saka could have penetrated into, and much less have been current in, so isolated and distant a province as Kashmir. Nor can it be supposed that Kanishka, whose empire did not extend in the south beyond

* History of Indian and Eastern Arch., p. 742.

Muttra and Benares, founded either of these two eras, for they originated, as will appear from my next paper, under totally different circumstances.

Professor T. W. Rhys Davids raises in this connection a very interesting question in his learned work on *Buddhist India*, namely, the connection between the date of Kanishka and the use of the Sanskrit language for literary and inscriptional purposes. He says (p. 314): "By the unanimous testimony of the best authorities we have, * * Asvaghosha, the author of the *Buddhacharita*, (a poem in pure elegant Sanskrit on the life of Buddha) lived in the time of the most famous of the Kushan kings, Kanishka. * * Now at what period in the history of Indian literature could such a poem have been composed?" He proposes to answer the question by assuming that "the oldest inscription in pure Sanskrit," that of Rudradaman at Girnar of the year 72, belongs to the middle of the second century A.D. Therefore, according to him, even if Asvaghosha's poem be the very earliest literary work written in regular Sanskrit for the use of the laity, it can scarcely be dated earlier. He further tries to confirm this argument by reference to the three extant commentaries on the ancient canonical books composed in Sanskrit at the Buddhist Council held

under the patronage of Kanishka. All these in his opinion point to the conclusion that Kanishka could not have lived earlier than the middle of the 2nd century A.D. It is not necessary for my purpose to refer the learned Professor to the ancient epics, the Ramayana and the Mahabharata, some portions of both of which at all events are admitted by most scholars to have existed two or even five centuries prior to the beginning of the Christian Era,* or to the probability that Asvaghosha's work is ambitiously modelled on these earlier works. Nor is it even necessary for me to draw attention to the fact that an elaborate commentary on the ancient Grammar of Panini, the Mahabhashya of Patanjali, might not have been, as it was, written in the second century B. C., if compositions in literary Sanskrit were then absolutely unknown. It is sufficient for me to state that the date given by the learned professor for Rudradaman's inscription is incorrect; and if, as I shall be able to show in my next paper, the correct date for the Sanskrit inscription is 15 A. D., it is clear that between 27 to 65 A.D., the period of Kanishka's reign, Asvaghosha could well have composed his poem and the Council, their commentaries.

* E.W. Hopkins' *Great Epic of India*, p. 398. *Imperial Gazetteer*, 1908, Vol. II, p. 235-7; Professor Macdonell's *Sanskrit Literature*, pp. 285-307.

CHAPTER V.

THE SAKA AND SAMVAT ERAS

OR

The Chronology of the Andhrabhritya and Kshatrapa Dynasties.

TWO eras are widely current in India, broadly speaking, one to the north of the Vindhya mountains and the other to the south. The Saka era, whose initial date is the 3rd of March, 78 A. D., prevails in the Deccan and the Peninsula; and the era of the Samvat, whose epoch according to the Purnimanta reckoning is the 23rd of February, 57 B. C. and according to the Amanta is the 18th of September, 57 B. C., is prevalent in Guzarat, Malwa and the adjacent States and Provinces. The Bombay method of calculation of the Saka era is one year behind the correct system prevailing in the Madras Presidency, owing to a mistaken supposition of 'elapsed' for 'current' years. Varabamihira, the learned astronomer of the sixth century A. D., states that according to the Paithamaha Siddhanta, the oldest of the

Siddhantas abstracted by him in the Pancha-siddhantica (XII. 2), the initial epoch of the five year cycle was the third year of the Saka era, current. Thus, it cannot be seriously doubted that the Saka era had been in existence at all events a few centuries prior to the sixth century A. D. Varahamihira calls it by the names of 'Saka Bhupakala' and 'Sakendrakala,' 'the era of the Saka king'; and Brahmagupta, another astronomer of the beginning of the seventh century, styles it as 'Saka Nripante', 'after the Saka king'. The king Mangalisa, who reigned towards the end of the sixth century A. D., refers in his inscription to the era as that of the coronation of the Saka king; and the poet Ravikirti, the composer of the Aihole inscription of Pulikesin II, the successor of Mangalisa, describes it as the era of the Saka kings. On the other hand, the later commentators on the works of Varahamihira and Brahmagupta, as well as Kalhana and Alberuni, the Mussulman historian of the eleventh century, misunderstand its epoch and wrongly refer it to the time when the Saka barbarians or their king was discomfited by King Vikramaditya. Latterly, the era has come to be connected with the name of king Salivahana, just in

the same way as the Samvat era of 57 B. C. is now associated with the name of Vikramaditya. That the Samvat, now known as Vikrama Samvat, was not originally so known, is proved by the celebrated Mandasor inscription, * discovered by Dr. Fleet, wherein it is incidentally stated that the king Kumaragupta (known from other inscriptions to have reigned between 415 and 449 A. D.) was reigning "when 493 years had elapsed by the reckoning from the tribal constitution of the Malavas". Dr. Fleet thus summarises † the history of the nomenclature of this era :—"Professor Kielhorn has shown that the era of 58 B. C. was known in A. D. 473 and 532-33 as 'the reckoning of the Malavas' and in A. D. 879 as 'the Malava time or era' and that records of A. D. 738 and 1169 speak of it as the 'years of the Malava lord or lords', * * that the word *Vikrama* is first found coupled with it in a record of A. D. 842 which speaks of 'the time called Vikrama,' * * that we hear for the first time of a prince or king named Vikrama, in connection with the era, in a poem composed in A. D. 993 * *

* Fleet's Gupta Inscriptions, pp. 79-87.

† Imperial Gazetteer, Vol. II. p. 4. See also Indian Antiquary, Vols. 19 and 20.

and that the first specific mention of the era as having been established by Vikramaditya is in a record of A. D. 1198."*

The question of the origin of the Saka era is now considered as settled and it is generally supposed that the coins and inscriptions of the Kshatrapa dynasty of Guzarat and Malwa which extend for over a period of three centuries, are dated in this era. The origin of the Vikrama era is however a matter of controversy between contending scholars. Dr. Fleet, on the one hand, maintains that it was "founded by Kanishka in the sense that the opening years of it were the years of his reign, that it was set going as an era by his successor, who * * continued it; and that it was accepted and perpetuated as an era by the Malava people and so was transmitted to posterity by them."† Mr. V. A. Smith and some other learned scholars, on the other hand, as positively decline to subscribe to this theory. In my opinion, however, neither the Saka nor the Samvat era

* It is curious that Varahamihira, the astronomer popularly supposed to have been one of the "nine gems" of Vikrama's Court, does not refer to the Samvat era at all. He refers only to the Saka era as noticed above.

† Imp. Gaz. Vol. II, p. 5.

can be considered to have originated in the manner stated and their origins have to be referred to totally different historical events.

To enable us to understand how these two eras arose, a study of the chronology of the Andhrabhritya and Kshatrapa dynasties, for both of which we have, comparatively speaking, sufficient materials, appears to me to be necessary. The names of the kings of the Andhrabhritya dynasty are given in the authentic Puranas and this information is supplemented by inscriptions and grants and the legends on coins. Soon after the death of Asokavardhana of the Mauryan dynasty in about 231 B. C., the imperial authority began to slacken and the frontier provinces asserted their independence under their local Rajas. Two such chiefs, Simuka Satavahana, the Andhra, and Khenraja of Kalinga seem to have set up for themselves in the territories with which they were respectively connected. The Andhra dynasty, that thus sprang into existence towards the end of the third century before the Christian era, comprised, according to the testimony of the Vishnu, Vayu and Bhagavata Puranas, thirty kings and reigned for 456 years, though there is a slight disagreement with regard to certain

details between these Puranas and the Matsya. Says Dr. Bhandarkar : " The disagreement here is not so great, wherefore the tradition as to thirty princes and about 456 years may be accepted as correct " * ; and Mr. Smith † also accepts the statement that 30 kings of this dynasty ruled for 456½ years. ‡

The Radcliffe copy § of the Matsya Purana gives the fullest list of these kings with the lengths of their individual reigns. Certain emendations have been proposed in the list of kings contained in the Radcliffe copy ; but I may be allowed to state that we are not at liberty to correct the list in the manner best suited to our preconceived opinions. For my own part, I prefer to adopt the list given in the original Radcliffe copy § of the Matsya Purana which Prof. Wilson had before him when translating the Vishnu Purana. We have to reject as incorrect and misleading, the lists contained in most other copies of the Matsya Purana or in the other Puranas, all of which are extremely

* Early History of the Deccan, p. 25.

† Early History of India, p. 202.

‡ For convenience of reference, see list printed at the end of Miss Duff's *Chronology of India*.

§ See Wilson's Vishnu Purana, Ed. Hall, Vol. IV, p. 190, where the list is given.

defective and none of which enumerates the full complement of the kings of the Andhrabhritya dynasty. Besides, there are only a very few mistakes in the Radcliffe copy and these too can easily be ascertained and corrected. For example, we find that it gives only 29 kings and $435\frac{1}{2}$ years and we can easily discover on a reference to all the available Puranas that the name of Sundara Svatikarna, the successor of Purindrasena, who reigned for only a year, has been inadvertently omitted * probably by the copyist, and that the period of 9 years given therein for the reign of Yagna Sri Satakarni is evidently a mistake † for 29 years. This last emendation is also rendered necessary by there being inscriptions ‡ of this king ranging from his 7th to 27th year. If the Radcliffe copy be corrected as above, we find that according to it also, there were 30 kings ruling for $456\frac{1}{2}$ years. But Mr. Smith and Miss Mabel Duff, probably guided by a note of Mr. F. Hall on page 200 of

* Vishnu, Vayu, Matsya, Bhagavata and Brahmanda Puranas mention this name.

† Vayu and some copies of the Matsya have 29 years. See Wilson's V. Purana Ed. Hall. Vol. IV, p. 198. Also Bhandarkar's Early History of the Deccan, 1st Edn. p. 25.

‡ Epigraphia Indica, I. 95.

his edition of Wilson's Translation of the Vishnu Purana, Vol. IV, insert the reign of one Meghasvati for a period of 38 years immediately before Arishtakarni. I submit that this is incorrect, because none of the Puranas, save the copy of the Matsya consulted by Hall, introduces any king between Pulumavi and Arishtakarni, and because such an addition would give a total for the whole dynasty 38 years in excess of the period given by the Puranas. I rather think that Meghasvati is another name for Sangha, the successor of Apitaka (or Ivilaka or Apilaka,) who reigned for 18 years; because we find that the copies of the Matsya consulted by Hall and Dr. Bhandarkar have Meghasvati in the place of Sangha, and because according to the Vishnu Purana also, Meghasvati is the successor of Ivilaka. Mr. Vincent Smith is however perfectly right in assigning four years more, from the evidence of inscriptions, to each of the reigns of Gautamiputra and Pulomat or Pulumayi Vasishtiputra. This additional period of eight years has to be provided for by deduction of as many years from the reign of Krishna, the brother and successor of the Founder of the Dynasty, who, according to many copies of the

Vayu * reigned only for ten years, and not for eighteen as is stated in our Radcliffe copy.

We have next to consider the chronological limits of this longlived dynasty. The Puranas would have us believe that the first king of the Andhrabhritya dynasty supplanted the last king of the Kanwa line, and as the Kanwas are stated by them to have come to an end $137 + 112 + 45$ or 294 years after the accession † of Chandragupta Maurya, this event has to be placed in 31 B. C. But this date for the beginning of this dynasty would make the dynasty last till 425 A. D., and would militate against the date of the twenty-fourth king, Pulumayi Vasishtiputra, a contemporary of Ptolemy (161 A. D.), as well as those of other kings. To meet this difficulty, Dr. Bhandarkar propounds the theory ‡ that the main line of the Andhra dynasty lasted only for 300 years, that the Matsya Purana mixes up in one list the kings of different branches of the dynasty who reigned in different territories, that the

* See Wilson's Vishnu Purana, Ed. Hall, Vol. IV, p. 195 (1). Also Dr. Bhandarkar's Early History of the Deccan, p. 25.

† 325 B. C. See Ind. Ant. 1908, p. 345.

‡ Early History of the Deccan, 1st Edition, pp. 24-27. Also "Indian Review", 1909, p. 404.

Andhra dynasty rose to power on the extinction of the Sunga dynasty in about 73 B. C., that the Kanwas and the last kings of the Sungas were contemporaries and that all these were exterminated by the Andhra Simuka Satavahana. I venture to submit that this theory is too complicated to be probable. I would rather think that this dynasty of the Andhra race, which was already a powerful nation in the country of the Lower Godavari and Krishna in the time of Alexander the Great, rose to power and conquered Maharashtra in about 208 B. C. during the disruption of the Magadhan empire soon after Asoka's death and that the Andhra king who supplanted the Kanwayana dynasty was not Simuka, but probably Sangha (35-17 B.C.), from whose days the Andhra empire seems to have included for a short period the province of Magadha also. For, a king of this dynasty is mentioned in the Hathigumpha inscription of king Kharavela of Kalinga, whose inscriptional date 165* is by Dr. Bühler and other Scholars referred to the Maurya era. It is evident that the era used by this south-eastern potentate cannot refer to such an early era as the Nirvanakala or

* *Con. Inscriptions of Asoka*, plate 17; Sixth Oriental Congress, III. 133.

to the northern Yudhishtira era, or even to such western and later eras like the Saka and the Samvat. On the other hand, we have the authority of an inscription of Asoka of his ninth year that he had conquered and annexed Kalinga to his own dominions; whereby, the Magadhan era most probably became current even in distant Kalinga.* The Hathigumpha inscription, which belongs to the 13th year of Kharavela's reign, states that "in his second year, Satakarni protecting the west, sent him a numerous body of horses, elephants, men and chariots" (apparently as an ally). The inference is plain that Satakarni reigned in the $(165 - 13 + 2)$ or 154th year of the Maurya era, † corresponding to 171 B.C. ‡ As Dr. Bhandarkar points out, Satakarni is not the general name of the Andhrabhritya dynasty, or of every one of the kings thereof. "It is the proper name of the king who bore it. It was sometimes asso-

* Dr. Fleet seems to think that the Inscription does not refer to the Maurya era. J. R. A. S. 1910, p. 244. His theory is however untenable.

† See Ind. Antiquary, 1908, p. 350.

‡ From the manner in which Satakarni is mentioned, it may also be inferred that he was still reigning at the time of the inscription, i. e., 165 Maurya era, or 160 B.C. Thus, this Satakarni seems to have reigned from prior to 171 B.C. till at least 160 B. C. The Puranas give him a reign of 18 years.

ciated with another name, but there is no indication anywhere of its having been the name of the family."* The 'Satakarni' of the inscription appears to me to be identical with 'Sri Satakarni' of the Puranas, the third in the list who came to the throne 33 years after the rise of the dynasty and who is described as 'Siri Satakanino' in the Nanaghat Cave Inscription. If we make a small allowance of about four years for the reign of Sri Satakarni prior to his sending the friendly mission to Kharavela in the second year of the latter's reign, the Andhrabhritya dynasty should have come into existence about $(171 + 33 + 4 \text{ or})$ 208 B. C.; and as it lasted for $456\frac{1}{2}$ years, it came to an end in 249 A. D., which date may further be verified by evidence from an independent quarter.

According to the late Bhagavanlal Indraji, one Iswaradatta of the Abhira tribe first established his power in the Konkan with Traikutaka as his capital and founded the Traikutaka, known later as the Kalachuri, or Chedi, Era, whose epoch is the 28th of July, (or 26th of August), of 249 A. D. † His coins, dated in the first

* "Indian Review", 1909, p. 402.

† Transactions of the 7th Oriental Congress, p. 216; Ind. Ant. 17. 215; Cunningham in Arch. Soc. of India, IX, 112.

and second years, have been found along with those of the kings of the Kshatrapa dynasty of Malwa and Guzarat, whose coins they may be said to resemble. It is rightly inferred therefore that Iswaradatta should have at least partially overthrown the Kshatrapa dynasty about the year 249 A. D. * I would submit that when once it is conceded that Iswaradatta after consolidating his power in the Konkan, proceeded on his career of conquest so far north as Guzarat and Malwa, he must have also protected his rear and preserved his line of communications by complete conquest of the Maharashtra territory, which he had necessarily to cross. As this date synchronises with the date we have given above for the end of the Andhra dynasty, it is very probable that the Traikutaka epoch of 249 A. D. marks the complete overthrow by Iswaradatta of the great dynasty of the Andhrabhrityas.

This date is further corroborated by another important circumstance. Ptolemy, who wrote after 151 A. D., and lived till 161 A. D. † refers to Ozene (Ujjain), Baithana (Paithan) and

* Bombay Gazetteer, New Edn. I. ii. 294.

† Smith's Classical Dictionary, 627. Ind. Ant. XIII. 313-411.

Hippocura, as being in his time the royal residence respectively of Tinatene, Siro Polemios and Baleocuros. The last two kings have been correctly identified, Siro Polemios with Pulumayi (Siri Pulimavi Vasishtiputra) and Baleocuros with Ilanno Gotamiputrasa Vilivayakurasa of the coins who, according to Mr. Smith, is the king Gautamiputra Satakarni, the father of Pulumayi. From the inscriptions of these kings, to be referred to in greater detail in the sequel, it may be inferred that Gautamiputra conquered the Maharashtra country, whose capital was Paithan, from the Khakharata king whose dynasty he exterminated, that after having ruled there for some time, he installed his son Pulumayi as the ruler of the conquered territory, and that he thereafter retired to Dhana-kataka, his original kingdom which he ruled over for about twenty years after the installation of his son at Paithan or Navanara. As these two kings, father and son, were contemporaries of Ptolemy, they too must have been reigning between 151 to 161 A. D., a result which exactly confirms the dates at which we have arrived for these kings* of the Andhra-bhritya dynasty.

* See list below.

I append hereunder a list of the thirty kings of this dynasty with the number of the years of their individual reigns and approximate dates as determined above.

We shall next proceed to discuss the history of the Kshatrapa dynasty. In the beginning of the second century before Christ, the regions of the Punjab and Sindh were the scene of the interminable raids of Hellenic adventurers. Pushyamitra, the founder of the Sunga dynasty, stemmed for a time the tide of foreign invasion by a series of successful engagements on the banks of the Indus, so that towards the end of the second century B. C., the Sungas continued to be masters also of Malwa. * But before this dynasty came to an end in about 76 B. C., there were still graver inroads made into the frontiers of Hindustan by hordes of foreign barbarians, the Parthians, Sakas and the Yueh-chi, and some of the more distant provinces were torn from the empire of Magadha. Thus towards the middle of the first century before Christ, one of these hordes, probably of the Saka or Parthian race, to which Ghasmotika and Chash-tana belonged, entered India through Sindh, and conquered and occupied Guzerat and Malwa; and another belonging to the Kushan tribe of the Yueh-chi race, to which Huvishka and Kanishka belonged, poured into India through

* See Malavikagnimitra, where Agnimitra, son of Pushyamitra, is stated to be king of Vidisa.

the north-west frontier and subjugated the Punjab and Kashmir. Chashtana, the son of Ghsamotika, was the founder of the Kshatrapa dynasty of Saurashtra; and the title 'Mahakshatrapasa' by which he was known, as evidenced by his coins, betrays his foreign, perhaps Parthian or Palhava, descent. His grandson was the famous Rudradaman of the Girnar inscription of the year 72 of an era which we shall venture presently to determine, who "made three times stronger the embankment" of the historic Sudarsana lake with which the names of some of the greatest Emperors of early India, namely, Chandragupta Maurya, Asoka and Skandagupta, are inseparably connected. The first to issue dated coins of this Kshatrapa dynasty, was Jivadaman of the year 100, the son's son of Rudradaman. He was succeeded by Rudrasimha, another son of Rudradaman, whose great grandson Mahakshatrapa Rudrasena II, reigned from about the year 176 to 194. Visvasena, the grandson of Rudrasena II, was the last of this branch of the dynasty and he seems to have occupied the throne from the year 214 to 225. Another branch of the dynasty beginning with one Rudrasimha, son of one Svami Jivadaman

succeeded soon after to the throne and it came to an end with Svami Rudrasimha, son of one Svami Satyasimha, in about the year 310. *

We have now to enquire what the era is by which the coins and inscriptions of the Kshatrapa dynasty are dated. In this connection, it is desirable to draw attention to two sets of inscriptions, one of the family of Rudradaman and the other of Ushavadata, son-in-law of Nahapana, the Kshaharata, king of Maharashtra. The latter are dated in the years 40 to 46 of *some era*, whereas one of Rudradaman's inscriptions is dated 72 and four others of his have recently been discovered at Bhuj referring to the year 52. I submit that Nahapana belonged to a totally distinct line of kings from that of Rudradaman and that it is wrong to connect the two together. The distinctive characteristics of the coins of the Chashtana dynasty, namely, the Chaitya, star and crescent, do not find a place in the coins of Nahapana, who has the thunderbolt for his symbol. † Rudradaman's dynasty ruled in Malwa and

* J. R. A. S. 1890, p. 613 ff; 1892, p. 365. Ind. Ant. XXI. 205. See also Miss Duff's Chronology of India, p. 296.

† Rapson's Indian coins, Plate III.

Kathiawar, whereas Nahapana reigned in Maharashtra and belonged to a race of kings called by the peculiar name of Kshaharata.

Both these dynasties, whose kings are alike known as Kshatrapas or Mahakshatrapas, are referred to in an inscription of Pulumayi Vasishtiputra of the Andhra dynasty, dated in the 19th year of his reign, which describes his father Gautamiputra as king of Asika, Asaka, Mulaka, Surashtra, Kukkura, Aparanta, Anupa, Vidarbha, and Akaravanti, and states that he was the lord of the mountains, Vindhya, Mahendra and others, that he destroyed the Sakas, Yavanas, and Pahlavas, that he exterminated the last remnant of the 'Khakharata' race and restored the glory of the Satavahanas. There can be no doubt that the exterminated 'Khakharata' race herein referred to is that of Nahapana Kshaharata, firstly, because no other dynasty, not even the Chashtana, is known by that peculiar name and secondly, because in the recent find in the Nasik district of a hoard of about 14,000 coins of Nahapana, "more than 9,000 of them are counterstamped with the words 'Ranno Gotamiputra Siri Satakanisa,' which shows that the conqueror used the money of the vanquished

monarch, but restamped it with his own name Gotamiputra Satakarni." * The Saka era of 78 A. D. seems to mark the previous conquest by Bhumuka, Nahapana's predecessor, of the Andhrabhritya territory of Maharashtra, because the dynasty founded by him was overthrown after the lapse of at least 46 years, the date of the last inscription of the Bhumuka dynasty, by Gautamiputra who ascended the throne in about 126 A. D. † As if to commemorate this disaster of 78 A. D. by which the Andhrabhritya dynasty lost a rich portion of their territories, the king Nemikrishna, in whose reign (56-81 A. D.) it occurred, seems to have been nicknamed, by contemporaries or posterity, as 'Arishtakarman', or "Arishtakarni", the ill-fated Satakarni. The Andhra sovereignty was thereafter confined to the remoter southern and south-eastern provinces and his immediate six successors were unable to wrest back the northern territories from the conqueror. The Kshaharata kings were ruling the Maharashtra country in the meantime and minting coins extensively, till Gautamiputra

* Dr. Bhandarkar in the "Indian Review," 1909, p. 403.

† See list above.

burning to regain the lost possessions waged war against Nahapana or his successor and "utterly annihilated the dynasty", and thus restored "the glory of the Satavahana race." Shortly after, in about the twenty-fifth year of his reign, Gautamiputra seems to have installed his son Pulumayi as king at Paithan, the capital of the conquered provinces of Maharashtra, and to have himself retired to, and ruled for about twenty years longer over, Dhanakataka, his paternal territory.

In the inscription of the 19th year of Pulumayi, above referred to, Gautamiputra is also spoken of as king of kings, as ruler of Surashtra (Kathiawar) Akaravanti (Eastern Malwa) and other adjacent countries and as having destroyed the Sakas and Palhavas. It is therefore evident that he was at all events the Lord Suzerain, if not the actual king, of Malwa and Guzarat about the time of the inscription (151 + 19 or 170 A. D.). There can be no doubt that the Chashtana dynasty belonged either to the Saka or Palhava (Parthian) race and that this dynasty, which lasted for over 310 years, was contemporary with the Andhra dynasty. The only question is who was the reigning king of this dynasty when Gautamiputra destroyed it shortly

prior to 170 A. D. Looking down the list of the Kshatrapa kings, we find that direct descent is traceable down to Visvasena (216-225) and that after him there is a break in the continuity of the relationship. A few years, probably three or four, after the last coin date of Visvasena, there ascends the throne one Rudrasimha belonging to a different family, probably to another branch of the Chashtana line of kings. Says Col. J. Biddulph, * "After Bhartridaman (father and predecessor of Visvasena), a disturbance in the direct succession apparently occurred and the title of Mahakshatrapa seems to have remained in abeyance for many years (till 270). His last known date is 214 and he is depicted on his latest coins as an old man. His son Visvasena only held the title of Kshatrapa eleven years after Bhartridaman's latest date, and from 214 to 270, the next ascertained date of a Mahakshatrapa, we have only one intervening Mahakshatrapa, Rudradaman, of whom no coin has been found and whose parentage is therefore unknown. At the same time, we have two Kshatrapas, Rudrasimha and Yasodaman, father and son, in succession to Visvasena, but not directly descended from any of their predecessors so far as is known." I con-

* J. R. A. S. 1899, p. 403.

tend that it was during the reign of Visvasena that Gautamiputra conquered the Kshatrapa dominions, so that Visvasena could not by reason of his dwindling territories well call himself by the title of Mahakshatrapa, but contented himself with the humbler designation of Kshatrapa, till at last in a very few years in about the year 225, he was vanquished and the dynasty was brought to an end; and Gautamiputra, the Andhrabhritya conqueror, seems to have set on the vacant throne, as his vassal, one Rudrasimha, probably a distant scion of the family, who and whose successors however dared not assume the title of Mahakshatrapa for a considerable time. As the inscription of Pulumayi recording the overthrow of the Kshatrapas is of his 19th year or 170 A. D., we may very well ascribe the last coin of Visvasena of the year 225 to a date shortly before it, or say to 168 A. D. If this view be correct, the era of the Kshatrapa kings must have begun about 225—168 or 57 B. C., which is the epoch of the Samvat era.

Secondly, this view is supported by a weighty consideration. As has already been stated, the coins of the Kshatrapa kings have been found along with those of Iswaradatta, the Traikutaka

king, who founded the Chedi era of 249 A. D. "Certain coins show," says Dr. Fleet, * "that the Kshatrapa rule was once interrupted by an invader, who assumed the titles Raja and Kshatrapa, and established another era. This invader was a certain Iswaradatta, whose coins are dated in the 1st and 2nd years of his reign." Scholars are therefore agreed that the Kshatrapa dynasty was subverted at least for a time by the Traikutaka king Iswaradatta, though there is some difference of opinion as to which king or kings that were so vanquished. Pandit Bhagavanlal Indraji and Dr. Fleet hold that the Kshatrapa kings Viradaman and Vijayasena, to whose coins Iswaradatta's are said to bear the most resemblance, were defeated by the latter and that probably Viradaman's son Rudrasena restored the Kshatrapa power. † It appears to me to be wrong to infer from this supposed resemblance that they were all contemporaries, as it merely shows that Iswaradatta struck coins in imitation of those of Viradaman and Vijayasena ‡ who might have lived much earlier. Besides, Mr. E. J. Rapson takes a different view § and places Iswaradatta be-

* Bombay Gazetteer, Vol. I, Pt. 2, p. 294.

† *Ibid.*

‡ See list of Kshatrapa kings appended hereto.

§ J. R. A. S. 1890, p. 384-6.

tween Damasena and Ynsodaman. The reasons therefor are also far from conclusive and are based upon insufficient materials. I am led to think that Iswaradatta brought about the extinction of the Kshatrapa dynasty as he did that of the Andhras about the middle of the third century A. D. Having first destroyed the Andhra power in the Deccan in 249 A. D., Iswaradatta seems to have gone further north and invaded after a few years, probably about 253 A. D., Guzarat and Malwa, the dominions of Rudrasimha, the last king of the later branch of the Kshatrapa dynasty. As the date of the last Kshatrapa king is the year 310 of the Kshatrapa era, the epoch of the era of the Kshatrapas may have to be put in about 310—253 or 57 B. C. Thus, there cannot be much doubt that the Kshatrapa era of Malwa and Guzarat was no other than the Samvat era of 57 B. C.

Thirdly, the Samvat is essentially a Malwa era, as it is expressly stated in the Mandasor inscription above referred to, as dating from the epoch of the consolidation of the tribes of Malwa (*Malavanam Ganasthbithya*)*.

* Fleet's Gupta Inscriptions, p. 79.

It could not have been founded by the Kushana dynasty for the reasons already stated in my paper on the date of Kanishka.* Moreover, it has not been shown that the Kushana rule extended beyond Mathura or Benares. No longlived dynasty of any importance, except that of the Kshtrapas, is known to history as having ruled over Malwa, to justify this era being ascribed to it. When we remember these facts in connection with the statement of Rudradaman in the Girnar inscription to the effect that "people of all castes came to him for protection and prayed him to be their Lord," we recognise that the independent tribes of Malwa and Guzerat elected him as their king just as they probably did his father Jayadaman and his grandfather Chashtana, before him. It is a well-known fact that these tribes of the west were famous even in early times for self-rule, for, that is the significance of the statement of such an ancient † work as the Aitaraya Brahmana, that "all the kings of the western countries are inaugurated to independent rule (Svarajya) and called Svarat." Now, these independent tribes of Malwa, recognising strength in union

* "Indian Review," November 1909,

† VIII. 14.

and making a virtue of necessity, for Chashtana seems to have overthrown them already, combined together and elected him as their common king and that great event, 'the consolidation of the tribes of Malwa' under one great Ruler, was most probably celebrated by the epoch of 57 B.C., which has since then been current therein. As Chashtana and Rudradaman ruled from Ujjain over a number of adjacent countries, * this Malwa era came to be adopted north of the 'Vindhya'. In the same manner, as Bhumaka and Nahapana ruled in the Maharashtra country, the era founded by Bhumaka, namely the Saka, became current in the countries south of the Vindhya; and as both the eras were convenient for purposes of calculation and the epoch of the Saka era was utilized as a starting point by Astronomers, they have been continued ever since. This is the reason why the southern era was originally known as Sakanripakala, the era of the Saka king. No doubt, long subsequently, the two eras came to be connected, the earlier with the name of Vikramaditya and the later with that of Salivahana. This is be-

* These were ruled over by Viceroys. See Rudradaman's Girnar inscription according to which, Saurashtra and Anarta were then being ruled over by a Palhava Viceroy, named Suvisakha.

cause, in the case of the era of 78 A. D., the dynasty of Simuka Satavahana, a name stated in Hemachandra's Grammar to be equivalent of the Prakrit Salivahana, ruled for a long time over Maharashtra both subsequently and prior to the days of the Bhumaka dynasty; and because in the case of the era of 57 B. C., a king of the name of Vikramaditya, identified by some * with a king of the sixth century A. D., namely, Yashodharman of the Mandasor inscriptions † and by others with Chandragupta I. of the Gupta dynasty, is traditionally supposed, either rightly or wrongly, to have ruled over Malwa and left an imperishable name, which must have quite obliterated the memory of the fame of the Chashtana dynasty.

Fourthly, the king Tiastenes, mentioned by Ptolemy and already referred to, has been identified with Chashtana, the Mahakshatrapa; and we have to consider if the identification is correct. The earliest inscription of Rudradaman, his grandson, is of the year 52. As those who so identify refer this date to the Saka era, Rudradaman should have begun to reign at the latest about $78 + 52$ or 130 A. D. Inasmuch as his father Jayadaman and his grandfather Chashtana seem

* See Dr. Hoernle in J. R. A. S. 1905, p. 31; 1906, p. 89.

† Fleet's Gupta Inscriptions, 142 and 149.

to have had prosperous reigns, we cannot well put the reign of the latter after 100 A. D. If we bear in mind that Ptolemy began to write only after 151 A. D., and died about 161 A. D., and that Pulumayi, one of the other two contemporary kings referred to by him, came to the throne only after 151 A. D., * it becomes clear that Ptolemy clearly refers to a king who reigned at Ujjain between 151 and 161 A. D. It may also be remembered that Ptolemy states that Paithan was then being ruled over by Pulumayi and not by Gautamiputra, (who reigned there in the fifth decade of the second century A. D.) and that he does not make the slightest reference to such powerful kings like Bhumaka and Nahapana, who were ruling there one after the other from 78 A. D. till the date of the overthrow of their dynasty by Gautamiputra. Why then should Chashtana, who cannot be considered greater than the more recent Nahapana (124 A. D.), be alone referred to, when he ought to have reigned, if the era of the Kshatrapa dynasty were Saka, half a century before Ptolemy's time? Moreover, according to such an interpretation, Rudradaman should have been living (52 or 130 A. D. to 72 or 150 A. D.) then or recently dead and he

* See list above.

cannot by any means be said to be the Tiastenes of Ptolemy who was reigning over Ozene or Ujjain at the time of Ptolemy. If we take a glance at the list of the Kshatrapa dynasty, we find that king Visvasena (Prakrit, Issasena)* was ruling there from about the year 214 to 225 of the Kshatrapa era, which, if understood to be the Samvat, would correspond to 157 to 168 A.D. It has also been shown already that it was this Visvasena who was finally vanquished by Gautamiputra, the father of Pulumayi, both of whom also are referred to by Ptolemy as his contemporaries. I think it very probable that it was this king, Issasena, which name may easily be metamorphosed by foreigners into Tiastenes, that is referred to by Ptolemy. Or, it might be that the founder of the dynasty being for all practical purposes Chashtana, the dynasty went by the name of Chashtana, just as the Andhra-bhritya dynasty is known also by the name of the founder Satavahana; and Ptolemy probably understood by Tiastenes 'one of the race of Chashtana.'

Fifthly, Rudradaman states in the Girnar inscription, * above alluded to, that he reestablished deposed kings on their former thrones, that he assumed the title of Mahakshatrapa, that he

* *Epigraphia Indica*, VIII. 36.

conquered Akaravanti, Anupa, Surashtra, Aparanta, and other provinces, that he twice conquered Satakarni, the lord of Dakshinapatha, and that he did not destroy him "on account of the connection with him not being remote." As already stated, this king appears from the evidence of this and the Bhuj Inscriptions to have reigned at least from 52 to 72 of the Chashtana era. Mr. Smith takes it to refer to the Saka era and thinks that Pulumayi Vasishtiputra is the Satakarni mentioned by Rudradaman in the inscription and that the nearness of relationship between him and Pulumayi mentioned therein refers to the circumstance that the latter married the daughter of the former, whom Mr. Smith names as Dakshamitra.* With due deference to his great authority, I may submit that neither of the statements is correct. In the first place, if the era of Rudradaman were the Saka era, he ought to have reigned at least from (52 to 72 or) 130 to 150 A. D., a date nearly contemporaneous with the date of Gautami-putra (126—151 A. D.). The countries stated in the above inscription as subject to Rudraman are mentioned by Pulumayi, in the inscription previously alluded to, as under the sovereignty

of Gantamiputra, whereas Rudradaman mentions Satakarni as lord of Dakshinapatha alone. Is it possible, I may be permitted to ask, for these two powerful kings, each of whom had a long and victorious reign, to have ruled over the same provinces and for each to have conquered the other? Thus, we are landed in an absurdity, and some writers try to explain away this irreconcilable circumstance by saying that these inscriptions have to be taken *cum grano salis*, and that one of these kings at any rate was not so great as his inscription would make one believe. This, I submit, is a far-fetched and impossible method of trying to get over the incontestable evidence of the inscriptions. Even granting for the sake of argument that the Andhra and Kshatrapa kings of the inscriptions did not actually defeat each other, still it appears to me impossible to hold that the statements of the two inscriptions that they were the rulers of the various countries specified therein are overdrawn. Moreover, as Dr. Bhandarkar points out, the "Satakarni" of Rudradaman's inscription cannot be Pulumayi for the reason that the latter "was never called Satakarni," * and it is wrong to suppose, as has already been pointed

* "Indian Review," 1909, p. 403.

out, that the name Satakarni was the general name for every king of the dynasty. Besides, there is no reason to suppose that Pulumayi married Rudradaman's daughter. Probably Mr. Smith had in mind the Kanheri mutilated inscription, according to which "the wife of Vasishthiputra Satakarni is represented as the daughter of a Mahakshatrapa."* She "cannot have been the wife of Pulumayi, for he was not called a Satakarni, but of Vasishthiputra Chatrapana Satakarni, whose name occurs in a Nanaghat inscription. Her name is lost in the Kanheri inscription, and Dakshamitra, which is given as her name by Mr. Vincent Smith, was the name of the daughter of Nahapana married to Ushavadata."† Again, we are not informed by the inscription who the Mahakshatrapa was. This title may be applied to any one of the numerous kings of the Kshatrapa race that ruled in the north-west of India from the first century before Christ to the third century after. It may even apply to Indian potentates like the Traikutaka Isvaradatta, who might have assumed that title. Dr. Bhandarkar suggests that Rudradaman refers in the aforesaid inscription to

* Dr. Bhandarkar in "Indian Review," 1909, p. 402.

† "Indian Review," 1909, p. 403.

Yagna Sri Satakarni. I venture to submit that this suggestion also is incorrect. For, if the era used by Rudradaman were the Saka era, he should have defeated Yagna Sri before 150 A. D., the date of the inscription; and it is extravagant to expect that king who reigned from 197 to 226 A. D.,* to have ruled even prior to 150 A. D. I am therefore of opinion that the Chashtana era is to be identified with the Samvat and not with the Saka era and that Rudradaman reigned from about (52 to 72 or) B. C. 5 to 15 A. D. The King Satakarni referred to in Rudradaman's Girnar inscription is therefore the tenth king of the Andhrabhritya dynasty who bears that name and reigned between B. C. 17 to 1 A. D.

Sixthly, if once it is conceded, as probably it will be, that the era of 78 A. D., is connected with the rise of the Bhumaka dynasty in Maharashtra, it cannot be maintained that it was adopted by Rudradaman who ruled over Malwa and Guzarat. It cannot be that he supplanted Nahapana and adopted his era, for according to Rudradaman's inscription of the year 72, the Dakshinapatha (Deccan or Maharashtra) was then being ruled over by one Satakarni. Nor can it be said that Chashtana supplanted the Nahapana dynasty, for the

* See list above.

last inscription relating to Nahapana is of the year 46 and the first relating to Rudradaman is of the year 52 and the interval of six years or even less cannot at all be sufficient for the reigns of the prosperous kings, Chashtana and Jayadaman. Nor can it be urged that Bhumaka or Nahapana extended his sway over Malwa and Guzarat and that Rudradaman or Chashtana, being a subordinate king, adopted his era, for both these kings, Chashtana and Rudradaman are styled as Mahakshatrapa and one of them at all events, namely, Rudradaman, conquered and ruled over a number of other countries as well. For the same reason it cannot also be said that both Rudradaman and Nahapana (also a Mahakshatrapa) were subject to some overlord in the north and adopted his era. Moreover, no such overlord has been shown to have started the era of 78 A.D., or even to have ruled over all the dominions of Rudradaman and Nahapana. It was at one time supposed that Kanishka, the great king of Kashmir and the Punjab, might be connected with the epoch of 78 A. D. ; but that theory, as shown in my last paper, is incorrect and it has long been given up. It is therefore evident from the foregoing reasons that the era of Rudradaman and his dynasty was not the Nahapana era of 78 A.D., and that the two

Eighthly, it may be remarked that the coins of Chashtana contain his name in Brahmi, Kharoshtri and Greek characters and that his successors as well as Nahapana try to imitate the Greek script along the borders of their respective coins. But the imitation is so badly executed that the Greek script on these latter coins is not decipherable.* This circumstance shows that the Greek characters were well understood in the days of Chashtana, but were soon forgotten in subsequent times, and that Chashtana and Nahapana lived a long interval apart. Mr. Rapson, the learned author of *Indian Coins*,† is of opinion that the

were as distinct as the dynasties to which they respectively belonged.

Seventhly, one other circumstance in favour of the earlier date for Rudradaman may be referred to. The Girnar inscription of Rudradaman of the year 72, gives not only the names of the kings Chandragupta and Asoka who constructed and repaired the Sudarsana lake, but also of the former's artificer Pushyagupta and the latter's subordinate Tushaspa Raja, under whose superintendence the work was actually carried on. If Rudradaman dated his inscriptions according to the Saka era and lived about (72 + 78 or) 150 A. D., then there would be a vast interval of about 400 years between him and Asoka (273 — 231 B. C.,) and about 450 years between him and Chandragupta (325 — 301 B. C.) Is it to be expected that after the lapse of so many centuries, the names of the artificers also would be so well remembered? I would rather think that Rudradaman lived much earlier and that he commenced to reign about the year 52 of the Samvat era, or 5 B. C. *

* It may be interesting here to note that the so-called "earliest Sanskrit inscription," namely, the Girnar inscription of Rudradaman, belongs to the year 72 of the Samvat era, or to 15 A. D. See *ante*, p. 150.

Eighthly, it may be remarked that the coins of Chashtana contain his name in Brahmi, Kharoshtri and Greek characters and that his successors as well as Nahapana try to imitate the Greek script along the borders of their respective coins. But the imitation is so badly executed that the Greek script on these latter coins is not decipherable.* This circumstance shows that the Greek characters were well understood in the days of Chashtana, but were soon forgotten in subsequent times, and that Chashtana and Nahapana lived a long interval apart. Mr. Rapson, the learned author of *Indian Coins*,† is of opinion that the silver coins of Chashtana (and of his successors and also of Nahapana, who imitate the coins of Chashtana) are copied from the Hemidrachms of the Greek Princes of the Punjab, more particularly perhaps from those of Apollodotus Philopator (2nd century B. C.) and that they seem to follow the same weight and standard. All these facts also go to support the earlier date for Chashtana.

Lastly, we shall consider certain possible objections to the conclusions herein arrived at. It is said that because the silver coins of

* J. R. A. S. 1899, p. 357.

† P. 21.

Chandragupta II * of the Gupta dynasty appear to be imitated † from the Kshatrapa coins, therefore it is likely that he put an end to the Kshatrapa dynasty, whose beginning has consequently to be placed towards the end of the first century A. D. This inference, I submit, cannot be legitimately drawn from the data obtainable. If there be the resemblance claimed, it only proves that the Gupta dynasty came to reign after the Satrapæ, and that they imitated some of the coins of the latter, just as they did the coins of the Kushanæ,‡ which they resemble still more closely. Secondly, the iron pillar § at Delhi is understood as recording the conquest by Chandragupta II, of the Bhabhas near the seven mouths of the Indus and it is also surmised that Chandragupta II conquered Guzarat and Malwa. All this may be quite true; but nowhere is it stated that Chandragupta II overthrew this particular Kshatrapa

* His coin and inscription dates range from 60 to 95 of the Gupta era, (Epoch, 8th March. 319 A. D.) i. e., 388 to 414 A. D. For Gupta or Vallabhi era, see 'Fleet's Gupta Inscriptions, Intro. 124. Indian Ant. XX. pp. 370 ff.

† Dr. Bhandarkar in *Early History of the Deccan*, p. 100.

‡ See "*Indian Review*," November 1909, where I have maintained that Kanishka was the last of the three Kushanæ, and that he reigned between 27 to 63 A. D.

§ Fleet's *Gupta Inscriptions*, p. 139.

dynasty which, as I have already stated, had already come to an end about 253 A. D. Thirdly, one Chandragupta is mentioned in Harshacharita of the seventh century A. D., as having killed a Saka. It is supposed but not with sufficient reason, that the Chandragupta and the Saka mentioned therein refer to Chandragupta II. of the Gupta dynasty and the last king of the Kshatrapa dynasty respectively and that a dynastic revolution is hinted therein. It is submitted that this inference is rather fanciful, for the text merely says * :—"In his enemy's city, the king of the Sikas, while courting another man's wife, was butchered by Chandragupta concealed in his mistress' dress." On the other hand, it appears to me that the Kshatrapa dynasty was completely overthrown after the lapse of over 310 years, as already stated, by Iswara-datta in about 253 A.D., and that the epoch of the Samvat era, namely, 57 B.C., marks the consolidation of the tribes of Malwa into one great nation under Chashtana, the founder of this longlived dynasty.

I subjoin hereunder two lists of the Kshatrapa kings with their respective dates, for convenience of reference.†

* Harshacharita, Trans. by Cowell and Thomas, p. 194.

† See J. R. A. S. 1890, p. 406-7; Miss Duff's Chronology of India, p. 296.

Kshaharata kings of Maharashtra :—

Nos.	Names of Kings	Inscrip. Date. Epoch 78 A.D.	Date A. D.
1	Dhumaka		78 A. D.
2	Nahapana, son of 1	40-46	118-124 A.D.
3	(Dakshmitra, daughter of 2, married Usha- vadata.)		

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